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ABSTRACT

Beginning with a glance at Montana's past, this publication looks to the state's future in terms of demographic patterns, employment growth, technological changes, educational needs, and workplace changes. Population, work force, and employment projections are compared with national trends. Productivity and job changing are considered, and displaced workers are acknowledged. Finally, the role of government in work force changes is considered, with a short examination of programs facilitated by the Job Training Partnership Act (JTPA) and Montana legislation. Skill levels and specific vocational preparation for various careers are profiled. Numerous graphs are included. (KC)

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WORKFORCE TO THE YEAR 2000:

OPPORTUNITIES AND CHALLENGES

1889-1989
CENTENNIAL

MONTANA

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MONTANA WORKFORCE TO THE YEAR 2000:

OPPORTUNITIES AND CHALLENGES

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Employment and Training Administration

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CHAPTER ONE

MONTANA FROM PAST TO PRESENT

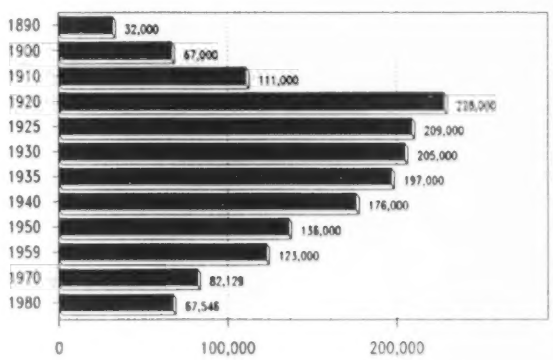
"Agriculture ranks as Montana's most important economic activity. For a period in excess of twenty-five years, farm income has ranged between 15 and 35 percent of total personal income in the state." This statement from The 1957 Montana Almanac evokes an image of Montana's past and provides a historic point of reference---where is Montana now and where will Montana be by the year 2000? More specifically, what are the factors that have come together to shape Montana's changing workforce, how will these factors evolve further as we move to 2000, and what kinds of jobs and how many of these jobs can we expect in the future? These are the questions posed, and answered to the extent possible, in this study.

MONTANA'S EARLY WORKFORCE HISTORY

---THE AGRICULTURAL ERA

Montana moved from territorial status to statehood in 1889, and even at this early time was evolving from narrow economic dependence upon mining and open range grazing to a more settled farming/ranching economy. Mining has not disappeared, of course, from Montana's overall economic picture, although its importance has long ago been eclipsed by agriculture. The rapid growth of our state's farming population during our early history, however, and the continuing importance of agriculture to our economy, is demonstrated by Figure 1.1 below.

Montana Farm Population
1890–1980

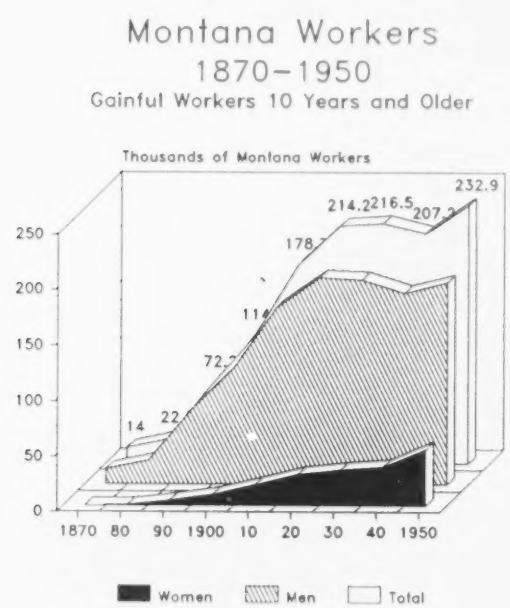


Sources: U.S Bureau of the Census,
Montana Agricultural Statistics Service

Figure 1.1

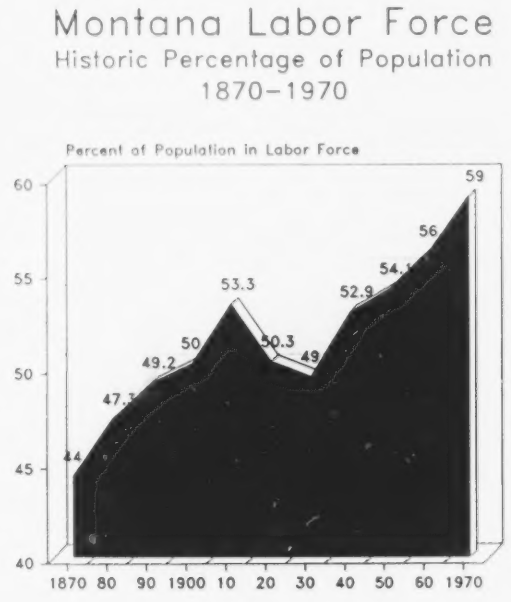
The completion of the Northern Pacific Railroad in the 1880s, and other railroads subsequently, contributed both to the ease of migration to Montana and the export of agricultural commodities from our state to

markets elsewhere. The large scale immigration America was experiencing from Europe in this period, in conjunction with a series of homesteading acts offering free land to settlers, resulted in a massive early wave of migration to Montana. More than 330,000 persons moved to Montana between 1870 and 1920, and more than two-thirds of these new Montanans settled on farms and ranches. With this enormous migration came a parallel dramatic increase in Montana's workforce, growing from 14,000 in 1870 to over 214,000 by 1920, as presented in Figure 1.2.



Source: U.S. Bureau of the Census
Figure 1.2

A part of the reason for the initial rapid growth in Montana's population, workforce and agricultural sector was the opportunity presented to migrants by Montana's open lands. Another reason for growth in Montana's agricultural economy during this period was the advent of World War I and the demand for food internationally. Clouds soon appeared on the healthy economic climate of Montana, however, first with the international demand for food ending with the war, the advent of more difficult growing conditions in Montana, and then with additional problems created by the World Depression in the 1930s. Montana's relatively high labor force participation factor, outlined in Figure 1.3, dropped below 50 percent in the 1930s, the first time since the 1800s.



Source: U.S. Bureau of the Census
Figure 1.3

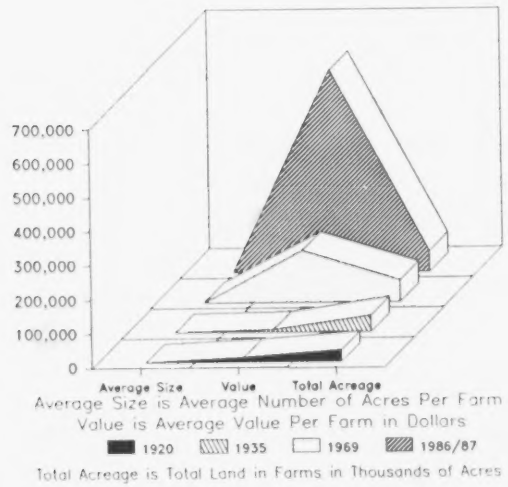
Changes in agriculture in Montana have been closely tied to changes in farms and farming. Montana's original homesteads were often too small to become economically viable, even if the weather and commodity markets cooperated with farmers, so a part of the history of farming in Montana has been the gradual increase in the number of acres per farm, and the gradual decrease in the total number of farms since 1920. Another factor accelerating the trend toward larger and fewer farms was the advent of farm mechanization that began around 1925. As Figure 1.4 indicates, farms have stabilized at about four times

their 1920 size, and forty percent of their 1920 numbers, in 1987. At the same time, the number of acres being farmed has almost doubled, and the average value of farms has increased by almost forty-four times their 1920 value, in 1986. Both of these 1986 numbers also represent a stabilization of sorts, as the optimum number of acres has been opened up for farming in Montana, and the land value of farming property has increased accordingly.

Montana Farm Changes
Size & Value, 1920–1986/87

Average Size	Average Value	Total Acreage	Number of Farms
1920 609	$13,468	35,071,000	58,000
1935 940	$7,433	47,512,000	51,000
1969 2,522	$150,222	62,918,000	25,000
1986 2,609	$592,047	60,000,000	23,300

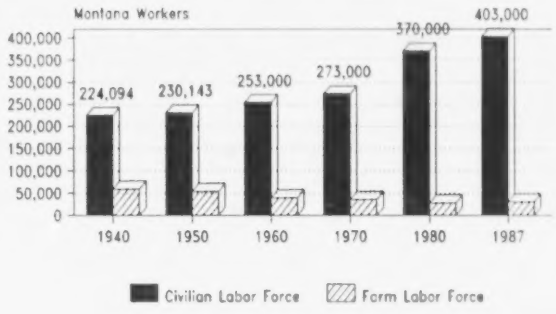
Montana Farms
Size and Value, 1920–1987



Sources: U.S. Bureau of the Census, MT Department of Labor

Figure 1.4

Decline of Montana Labor Force Involved in Agriculture, 1940–1987



Sources: U.S. Bureau of the Census, MT Department of Labor

Figure 1.5

MONTANA'S RECENT WORKFORCE HISTORY

---THE TRANSITION FROM AGRICULTURAL PREDOMINANCE TO A MORE DIVERSIFIED ECONOMY›

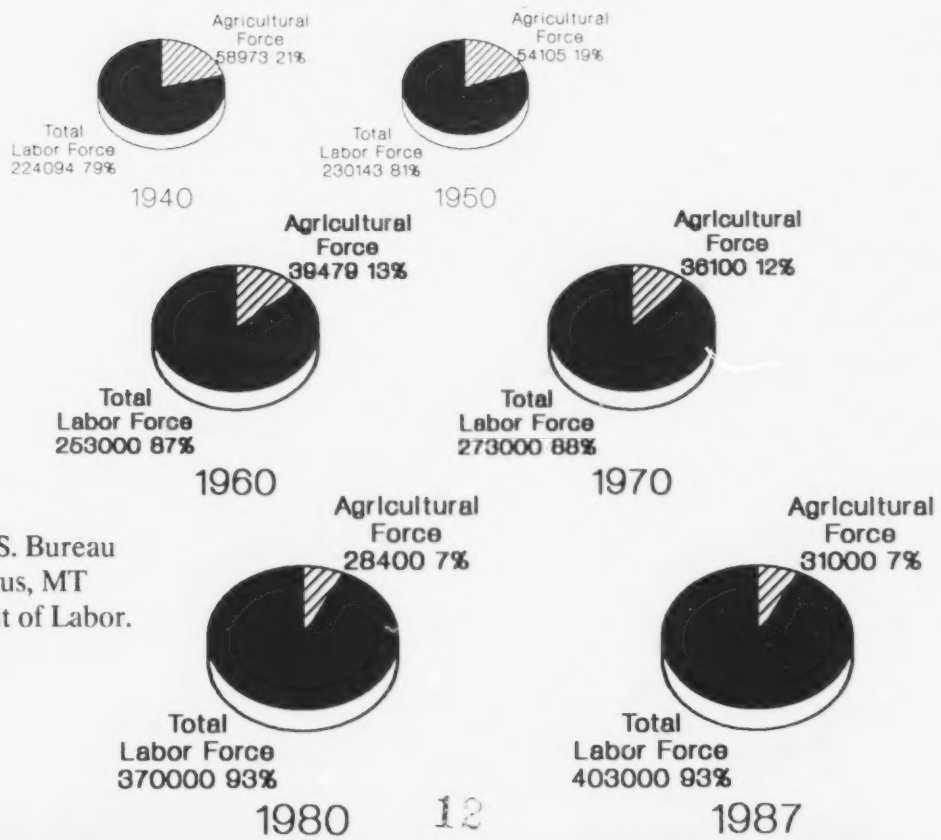
Beginning with the period of the 1950s, Montana's farm population began to decline, as shown in Figure 1.1. This farm population decline demonstrates the evolution of Montana from a primarily agricultural economy to a more complex and varied economy. Figures 1.5 and 1.6 show the actual decline in Montana's labor force involved in agriculture from 1940 to the present. Between 1930 and 1950 the decline in Montana's farm population amounted to about one-third, and between 1950 and 1980 the decline has been about one-half. Today's farm labor force in Montana is less than 8 percent of our total state labor force. It is important to remember, of course, that indirect employment has come to Montana through agriculture, for example in manufacturing and processing plants such as beet sugar refineries, flour and feed mills, and meat packing and dairy processing plants.

Even these indirect employment impacts from agriculture, however, along with other indirect impacts such as wholesale and retail sales associated with farming, are decreasing substantially as agriculture assumes a less dominant role in our economy.

Some references portray these declines in Montana's agricultural sector as symptomatic of an ailing economy, rather than recognizing that Montana's economy continues to evolve. Just as agriculture replaced mining and open range grazing, so too has employment in services or retail sales jobs outstripped agriculture beginning in 1960. Montana's economy continues to become more diverse and varied, and these changes reflect a broader, more substantial economy. It is Montana's broader, non-agricultural economic sectors which will provide new jobs to the year 2000.

Chapter Two below will provide information about the numbers and types of workers in Montana---our state workforce---to the year 2000. In essence Chapter Two talks about the "supply side" of our economy. Chapter Three in contrast will provide information about what types of jobs, and how many jobs, we anticipate having by the year 2000, or the "demand side" of our economy. Careful reading of these chapters can assist you in planning your own work career for the future.

Agricultural Jobs As Percentage of Total Montana Civilian Labor Force



Sources: U.S. Bureau of the Census, MT Department of Labor.

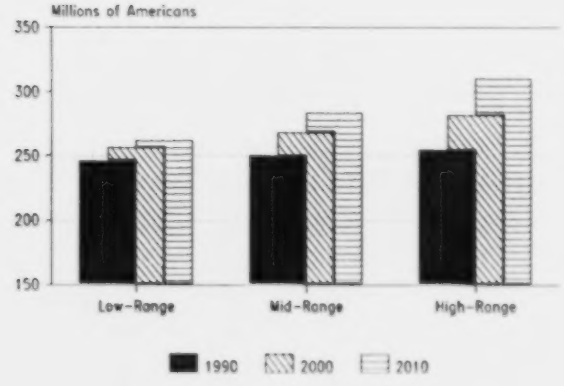
Figure 1.6

CHAPTER TWO

DEMOGRAPHICS AND MONTANA TO THE YEAR 2000

Demography is the study of the characteristics of human populations, including such characteristics as size, growth, and distribution. By looking closely at how our population will change over time, both nationally and in Montana, we can begin to understand just what changes we can expect in work and workers to the year 2000. A portion of our total population makes up what is called our national labor force---those working or seeking work---and changes in the general population directly affect our labor force. As an example, the size and composition of population increases can bring about an increase in the demand for school construction or retirement housing, creating an increased need in our labor force for construction workers.

U.S. Population Projections
Range of Estimates for 1990–2010



Source: U.S. Bureau of the Census
Figure 2.1

SECTION ONE: DEMOGRAPHIC PATTERNS ON THE NATIONAL AND STATE LEVELS

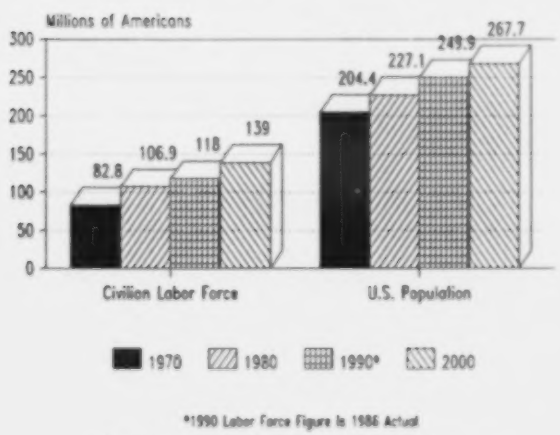
NATIONAL DEMOGRAPHIC PATTERNS

Nationally our population is not expected to grow as rapidly over the next fourteen years as it has in the past. From 1970 to 1980 the U.S.

population increased by 11.4 percent or over 23 million people, and projections are for only a 9.9 percent increase between 1980 and 1990. Nationally the increase will be only 7.1 percent between 1990 and 2000, lower even than our lowest national increase in the decade of the 1930s of 7.2 percent. Figure 2.1 shows some of the estimates for U.S. population growth to 2010.

In a real sense our national population represents a reservoir of workers for our national labor force, and changes in population directly affect available workers. While our national labor force growth was about 35 percent from 1972 to 1986, Bureau of Labor Statistics projections for growth to 2000 suggest almost an 18 percent growth rate. Although our national labor force growth rate will not be as rapid, population growth will still continue to create more demand for goods and services, in turn creating more demand for workers in many occupations.

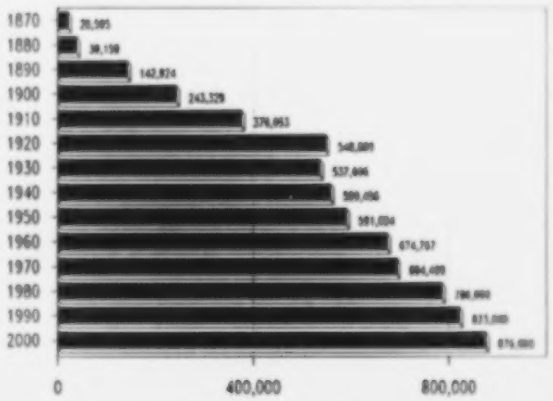
U.S. Population Changes
Compared to National Civilian Labor Force Changes, 1970–2000



Source: U.S. Bureau of the Census

Figure 2.2

Montana Population
Changes 1870–2000
1990–2000 Projections Are Low Mid-Range



Sources: U.S. Bureau of the Census, Nat. Planning Assn., U.S. Bur. Econ. Analysis

Figure 2.3

Our national population will be composed of relatively fewer children and youth and more middle-aged and older people, reflecting lower U.S. birth rates over the past twenty years, the maturation of the "baby boom" generation born after World War II, and the effect of improvements in health care. Minorities and immigrants will occupy a larger share of our national population and have a more significant role in our labor force as a whole. There will be significant changes in regional and state-level growth within the United States as such factors as desirable climate and the locations of new jobs alter existing population locations.

MONTANA DEMOGRAPHIC PATTERNS

Figure 2.3 outlines Montana's history of population changes from 1870 to 2000, a history with periods of rapid growth and periods of equilibrium. Montana's total population has increased over every decade except the 1920s.

Based on Figure 2.3, one could describe Montana's demographic history as being in four overall periods, with the first being that of rapid white settlement from the 1860s through 1920. A second period, beginning in 1920 and lasting through the 1950s, was an equilibrium of population, based on the constancy of agriculture and out-migration for those seeking other kinds of employment. The 1960s and 1970s constitute a third population period, very stable in population as the state economy became considerably more diverse and for the first time more people lived in urban rather than rural settings. A fourth, present era began in the 1980s, as the service-producing industries' growth extended the labor market in Montana and enabled our total population to increase. Our current era will apparently extend into the early 21st century, with the range of projected Montana populations, and work forces, portrayed in Figure 2.4.

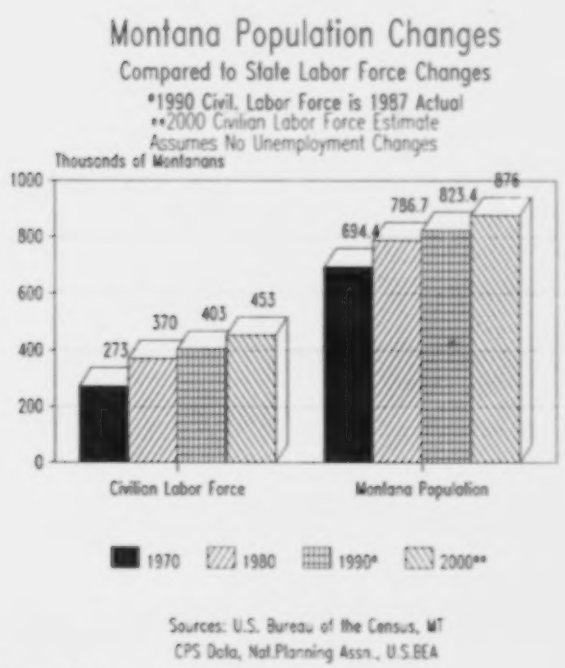


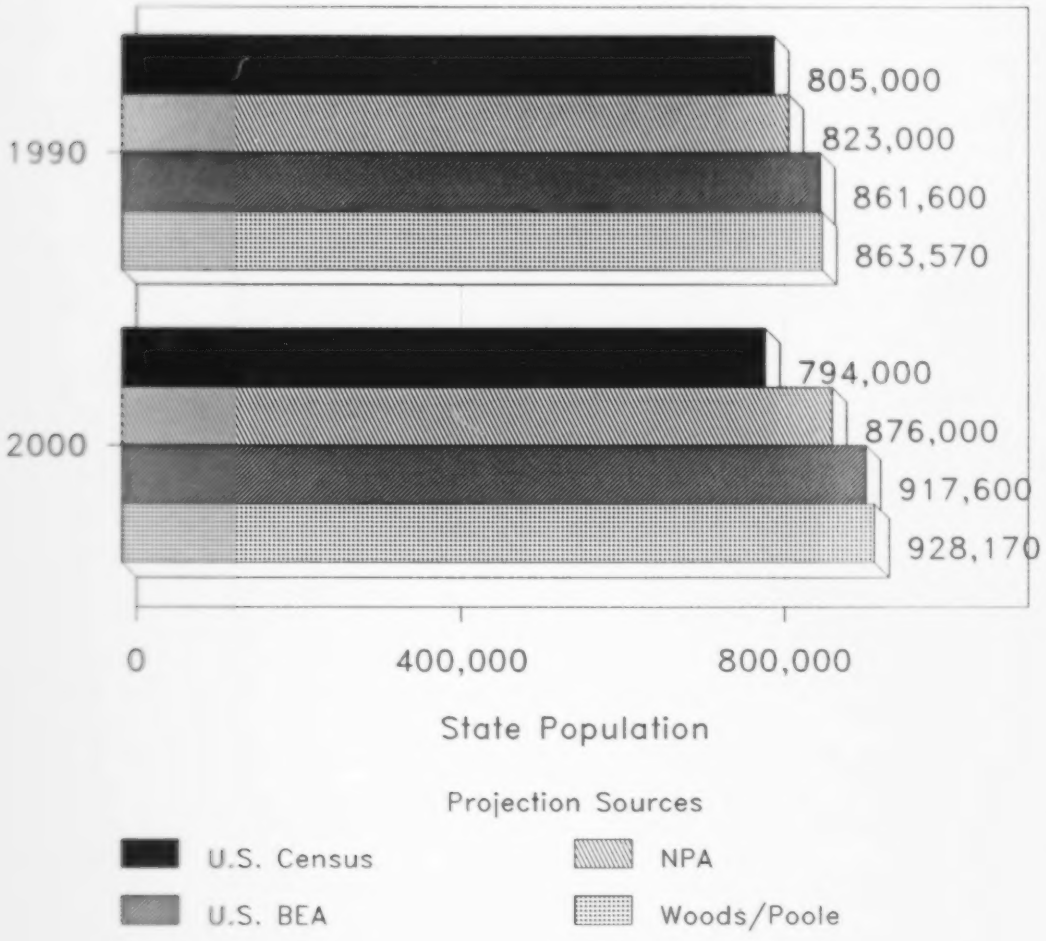
Figure 2.4

PROJECTIONS OF MONTANA'S FUTURE POPULATION

Analysts view Montana's future population growth differently, depending on what assumptions are included in their calculations and when they make their calculations. Figure 2.5 demonstrates the range of population projections for Montana for 1990 through 2000. The most recent U.S. Census projections, listed on the chart as "U.S. Census," are the most conservative, and assume continuation of economic factors at work in the very recent past. The other population projections have been developed by other organizations such as the National Planning Association and Woods and Poole Economics, and, along with the U.S. Bureau of Economic Analysis, also include labor force information in addition to basic population data. All of these other projections are higher than the projection of the U.S. Bureau of the Census. As we shall see shortly in the section below, the U.S. Census is a good lower end boundary for Montana's population projections, just as the Woods & Poole estimates constitute a good upper end boundary for these projections.

Figure 2.4 compares Montana's projected population growth with Montana's projected labor force growth from Chapter Three below as another way to relate future trends.

Montana Population
Projections for 1990–2000



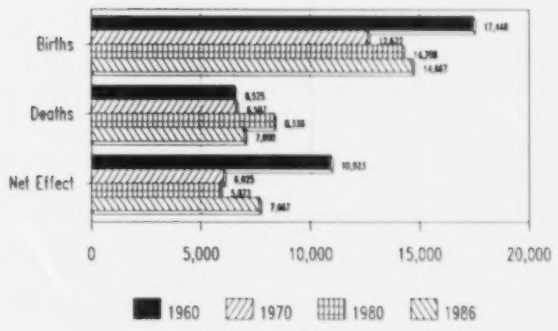
BEA=Bureau of Economic Analysis
NPA=National Planning Association

Figure 2.5

FACTORS BRINGING ABOUT POPULATION INCREASES AND DECREASES

Demographers look at the major factors affecting the size and growth of population, particularly births, deaths, and migration. Figure

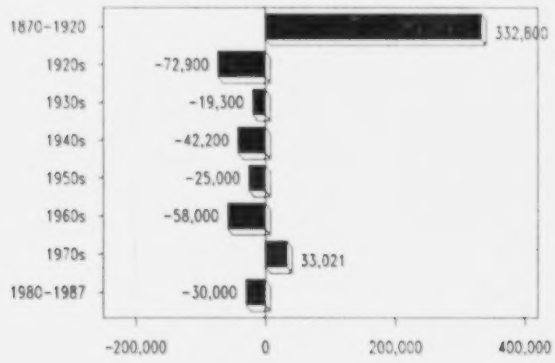
Population Change Factors
Birth & Death Rates, & Effect
Montana, 1960-1986



Sources:MT Dept of Health, Bureau of Records & Statistics,U.S. Bureau Census
Figure 2.6

2.6 compares relative birth and death rates in Montana since 1960, a comparison that demonstrates a healthy net growth factor of about 6,000 or more additional Montanans each year over that period. As a counterpoint, Figure 2.7 provides information on the net effect of in- and out-migration over Montana's history since 1870. Figure 2.7 clearly shows that, except for the earliest period and the 1970s, Montana has historically has had a history of out-migration. Figure 2.8 below lists

Montana Migration Patterns
Net Migration Effect, 1870-1987



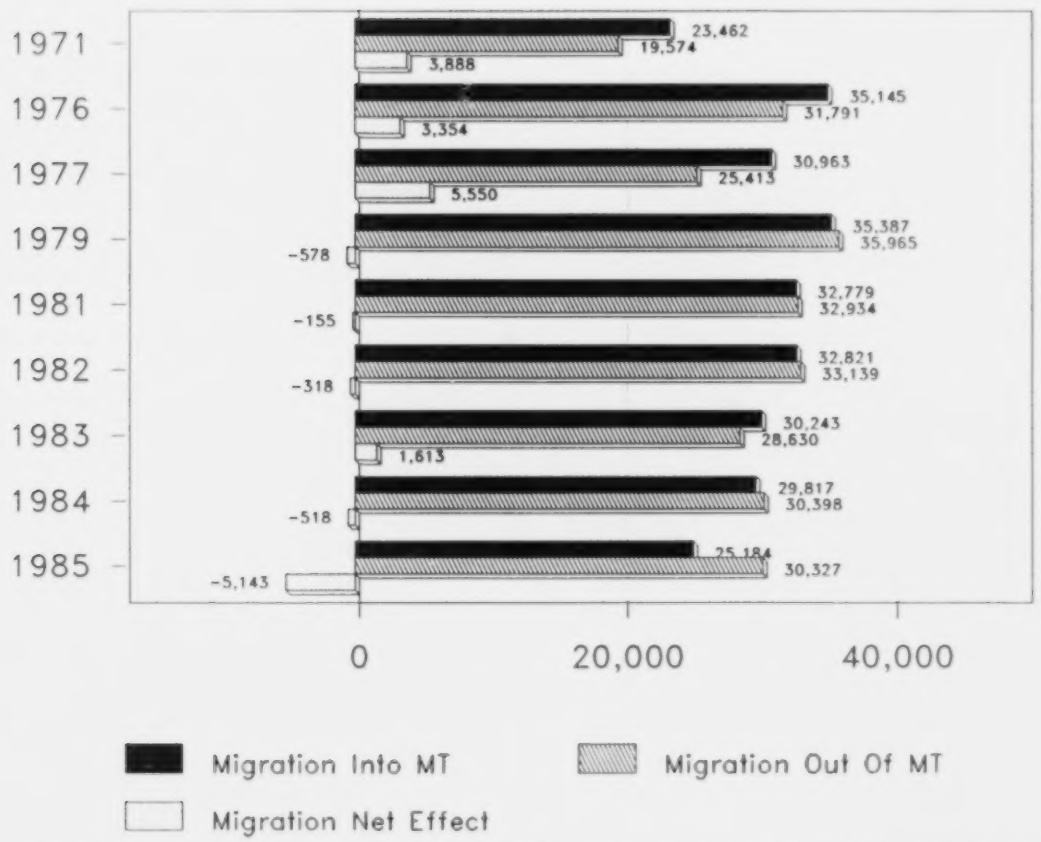
Sources: U.S. Bureau of the Census, MT Census & Economic Information Center
Figure 2.7

chronologically the effect of migration on Montana's population since 1970, an effect that can be described as positive or a balance between in- and out-migration until just the past few years.

Figures 2.9 and 2.10 shows some of the states that have contributed most to Montana's migration gains and losses since 1970, and what those population exchange rates have been. Based on this national Internal Revenue Service data, Montana has experienced only a slight decline, whereas states such as Ohio, New York, and Illinois have experienced major declines through migration.

When we combine the births, deaths and in- and out-migration of Montana from 1980 to 1986, we find that Montana has experienced a net population increase of 30,000 over its six most recent years. Not all of the data used in determining this population increase is complete. The migration data does not include those migrating to or from Montana who have not filed income tax returns, for example those out of work who leave Montana but find no new job in another state. Nevertheless the IRS information is still a useful indicator of

Montana Migration Patterns
Annual Migration Data
1970–1985*



*Years 1970–73 & 1976–78 were combined by IRS;
1979–80 data was not determined by IRS.
Combined years have been broken down into "1–year" segments.

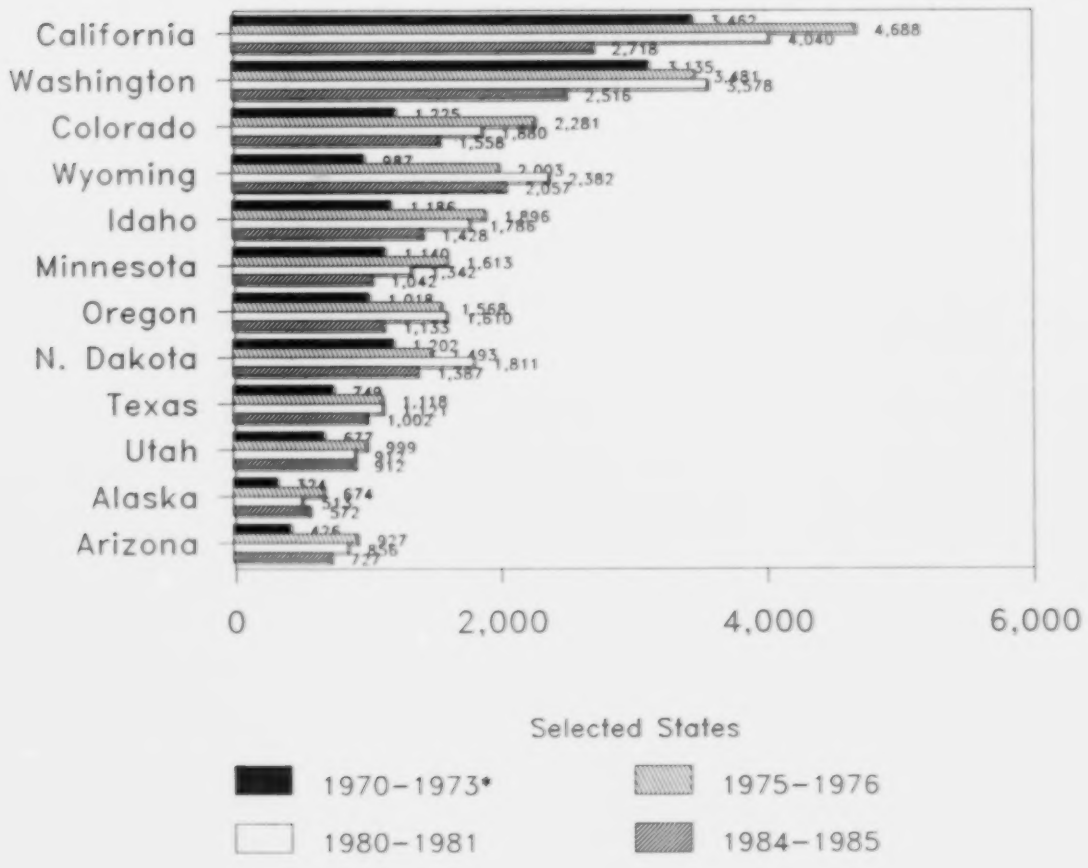
Source: IRS Interstate Migration Data

Figure 2.8

Montana Migration Patterns

Migration to Montana, 1970–1985

Other State Population Shift to Montana



*3 Year Composite Data Reduced to One

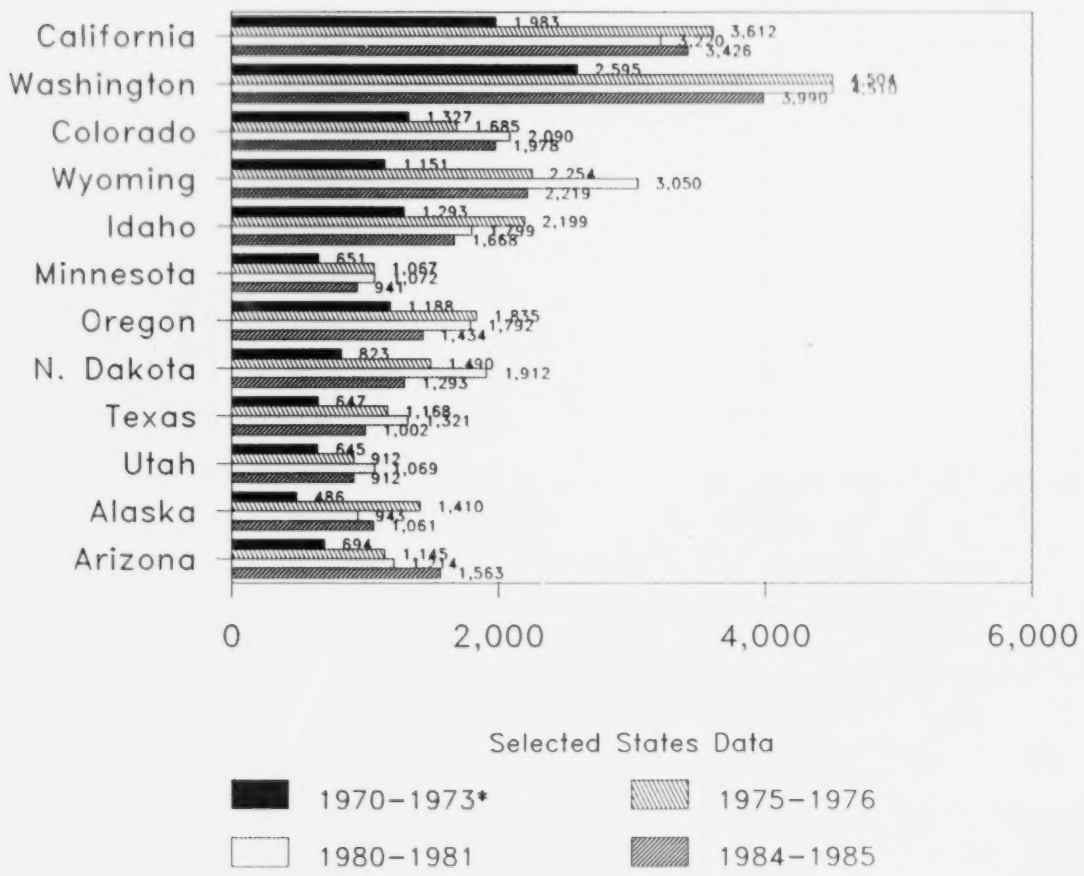
Source: IRS Interstate Migration Data

Figure 2.9

Montana Migration Patterns

Migration From Montana 1970–1985

Montana Population Shift to Other States



*3 Year Composite Data Reduced to One

Source: IRS Interstate Migration Data

Figure 2.10

Montana's population trends. Some initial U.S. Bureau of the Census information has been released that suggests that Montana may experience out-migration of approximately 12,000 people in 1987, 10,000 in 1988, 13,000 in 1989, and 7,000 in 1990. If these projections are accurate, Montana's overall population increase will slow accordingly, and the lower boundary of population growth will be appropriate. If these projections are exaggerated and Montana does not lose as many people from out-migration, mid-level population projections on Figure 2.5 will be more in line with our actual population increase.

SECTION TWO: CHARACTERISTICS OF MONTANA'S WORKFORCE TO THE YEAR 2000

Now that we have a better sense of the probable numerical changes in Montana's population over the next decades, we need to look more closely at the specific characteristics of our future workforce. What will the age structure of Montana's population be, and how will the age structure effect the participation rates of Montana's workforce? And what about female migration to the workplace, and the role of minorities in Montana's workforce? Will we see major changes, or should we expect much the same as we have experienced in the past?

YOUTH

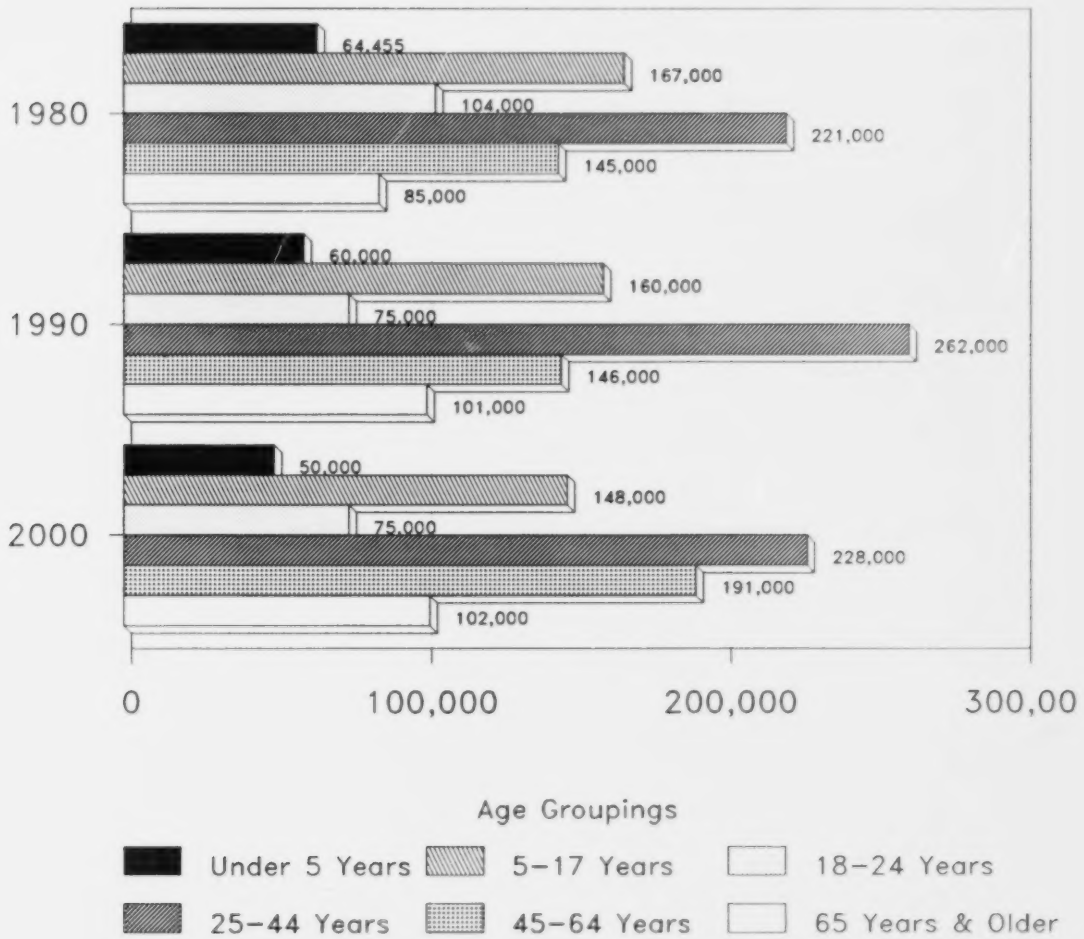
Figure 2.11 compares Montana's 1980 population with the most recent and most conservative U.S. Bureau of the Census projections for Montana in 1990 and 2000. In this comparison it is clear that Montana's youngest age groups---those less than five years old and 5-17 years of age---will decrease in numbers by about 5 percent by 1990 and another ten percent by 2000. These groups are the least involved in the Montana workforce, although high school students working part-time will continue to be involved in service jobs such as those found in fast food restaurants. Nationally the same pattern of decrease is projected, and already those in the 65-years-and-older grouping are beginning to be hired for many part-time positions that until recently were filled by high school students.

Montana's main youthful workers are in the age grouping of 18-24 years of age. As Figure 2.11 shows, this portion of our population---and therefore a comparable portion of our workforce---will decrease almost 28 percent between 1980 and 1990, but will stay the same size between 1990 and 2000. In comparison, the U.S Bureau of the Census projection for this youthful workers category is for over a 17 percent decrease nationally. Once again, as the younger end of our population decreases in its work force role, we can anticipate greater participation from older workers. Service jobs are expected to increase at the greatest rate in Montana between now and the year 2000, as Chapter Three below will describe, and most service jobs are located where most people are located. As a result Montana should experience a continued shift towards more urban than rural employment for workers of all ages.

THE BABY BOOMERS AT MID-POINT

Americans settled back into civilian life after the end of World War II and as a result the United States experienced an era of unusually high level of births that lasted until about 1961. The large number of children born during this

Montana Population
By Age Groups, 1980–2000



Source: U.S. Bureau of the Census

Figure 2.11

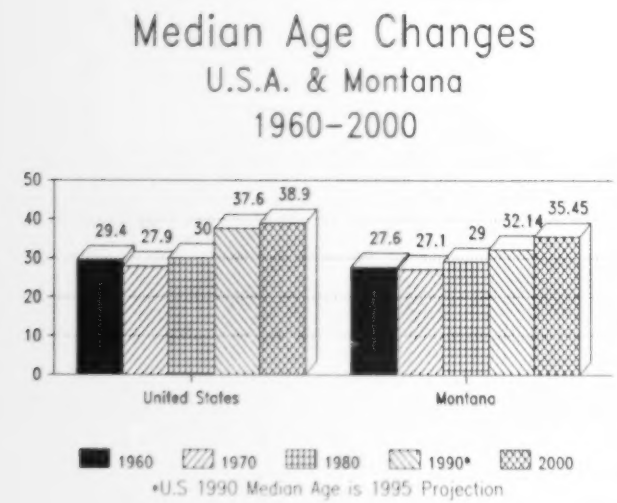
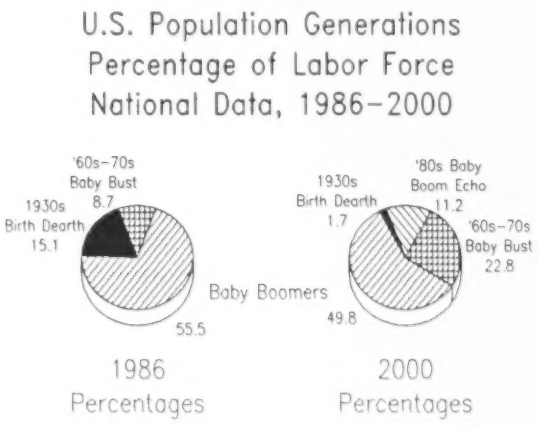


Figure 2.12

period are often referred to as the "baby boom" generation, and have shaped American society as the baby boomers have grown up. As Figure 2.12 shows, Montana has historically had a lower median age than the nation, and our median age will continue to be lower than the national average in 1990 and 2000. Just as the large number of baby boomers nationally will raise the national median age, so too will Montana's median age rise.

The effect of the baby boom generation on Montana can be seen in Figure 2.11 for the age group 25-44 years of age. Montana will experience almost a 19 percent growth in this group between 1980 and 1990, and the group will return to slightly over 3 percent above its 1980 size by the year 2000. These changes for Montana will closely reflect the national experience for this group over the same 1980-2000 period. The 25-44 years of age group is often described as the prime or most vigorous component of the workforce, so it will be interesting to see what dynamism these increases will bring to Montana's future.

"Mature workers" is often the expression for those in the 45-64 age category, and the aging of the baby boom generation will also begin to substantially affect the mature workers group both nationally and in Montana. Montana will experience only modest growth of one thousand additional workers in this group between 1980 and 1990, but will see an overall increase of almost 32 percent between 1980 and 2000. Reflecting Montana's comparatively younger population and the effect of migration patterns, national projections for the mature workers' group include much higher percentage increases. Figure 2.13 compares the role of the baby boom effect, and other population generations, on the national labor force between 1986 and 2000.



Source: Bureau of Labor Statistics

Figure 2.13

Some have expressed concern that an aging workforce may have a series of negative impacts on the economy, with older workers being less adaptable to a changing work place and changing skills needs. Chapter Three below discusses the importance of lifelong learning as a way to prevent these kinds of impacts.

SENIOR CITIZENS AND OTHER PERSPECTIVES ON THE AGE STRUCTURE OF OUR WORKING POPULATION

Senior citizens is often the label given to the population age group of 65 and older. Montana's 65 and over age group is projected by the U.S. Bureau of the Census to grow almost 19 percent between 1980 and 1990, to 101,000, but to increase only one percent over the next decade to a level of 102,000. Other, more optimistic, projections show a level of about 106,000 in 1990 and 120,000 in the year 2000. In the past this age group has been perceived as basically retired from and therefore playing a relatively small part in Montana's workforce. As the 65 and older group increases in number and as improved health care and life style changes continue to improve the physical and mental components of older age, this age group will play an increasingly important role in our state's workforce.

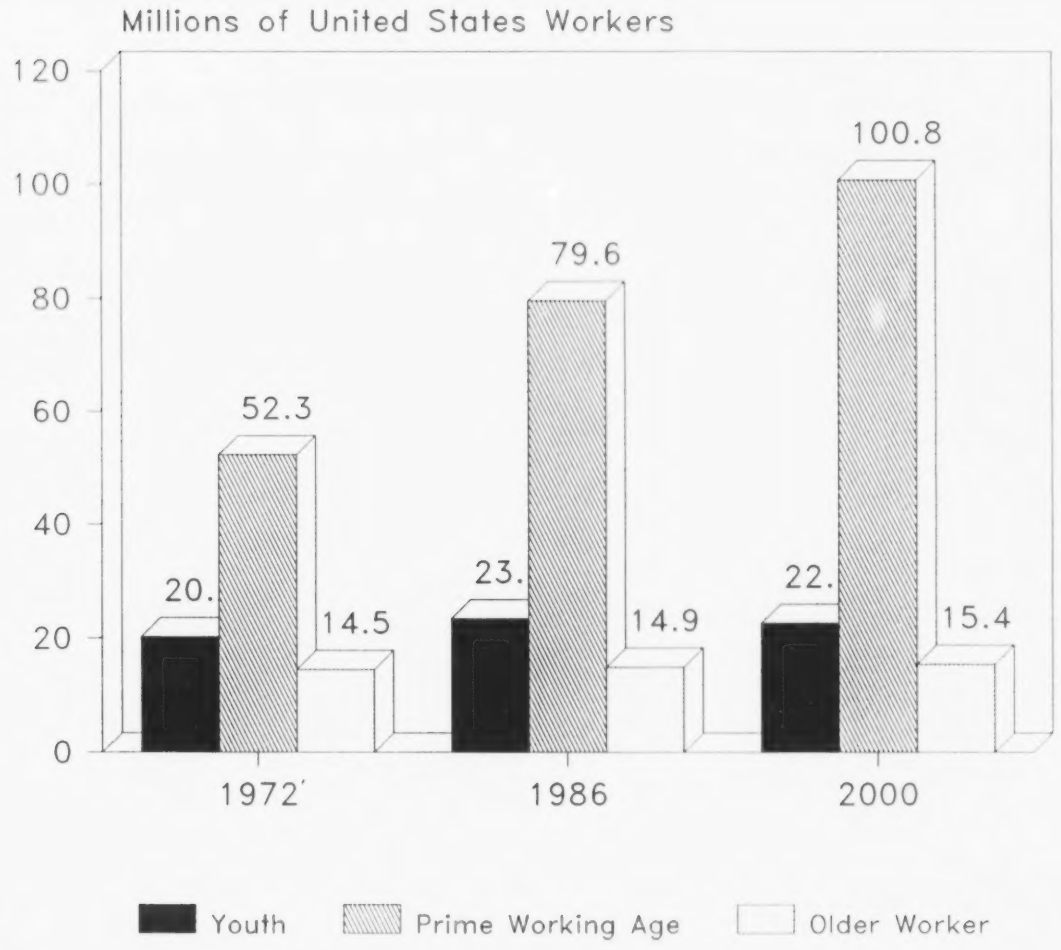
Not everyone necessarily agrees on definitions, and some would prefer that older workers be defined as those 55 years and older. Figure 2.14 compares national data over the period 1972- 2000, using as definitions: youth, those 16 to 24; prime working age, those 25 to 54; and workers age 55 and over. At the national level, while the percentage of participation in work for those 55 and older may decrease in some states, the actual numbers of older workers will increase as market demand for workers, and improved health for this age group, combines to bring them back to the workforce, or induces them to remain in the workforce. As an example, the Center for Career Change, located in St. Paul, Minnesota, provides a job bank for workers 55 and older in the St. Paul area. According to the Center's Director, James Zentner, "....[employers] are looking for workers who can bring maturity and expertise to a job. Right now we have more full-time positions than we have people to fill them."

WOMEN IN THE WORKFORCE

The number and percentage of women in the workforce has undergone dramatic change over the past fifty years. Figure 2.15 compares the actual numbers of men and women in the so-called "able" or noninstitutionalized portion of national population from 1972 to 2000. Figure 2.16 compares the same age groupings of men and women on a percentage basis for those years. For both of these figures the solid dark bars represent all men of the working ages 16 and older, and the heavy dotted bars represent all women of the working ages of 16 and older.

These figures show a compelling history of increasingly larger numbers of women entering the national workforce. Over the past 17 years women have made up 60 percent of the labor force growth nationally, and 64 percent of the national labor force growth is also projected to be composed of women between now and the year 2000. Since fewer women have historically been in the workforce as a whole, these increases are reflected in Figure 2.16 as an eroding total percentage for men and an equivalent increasing percentage of women in the workforce. In other words, male participation in the national labor force will decline from over 61 percent in 1972 to almost 53 percent in the year 2000. While men are projected to still constitute the majority of the national workforce, as women continue to enter the job market this difference in the share of the total workforce will continue to narrow. Figure 2.17 provides a more detailed breakdown by sex and age groupings of national labor force information. While there currently are no equivalent projections for the state of Mon-

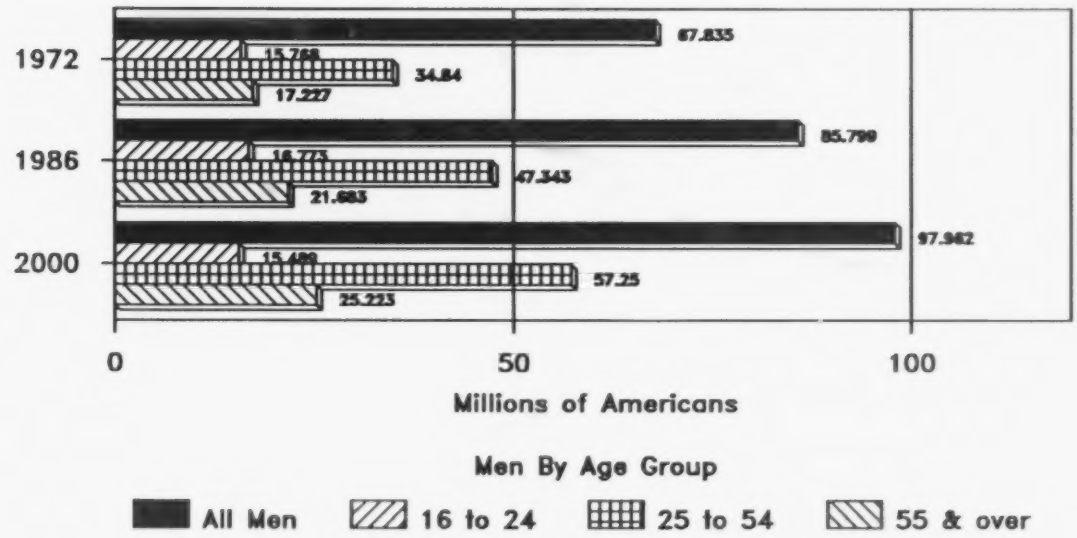
National Labor Force
Age Changes, 1972–2000



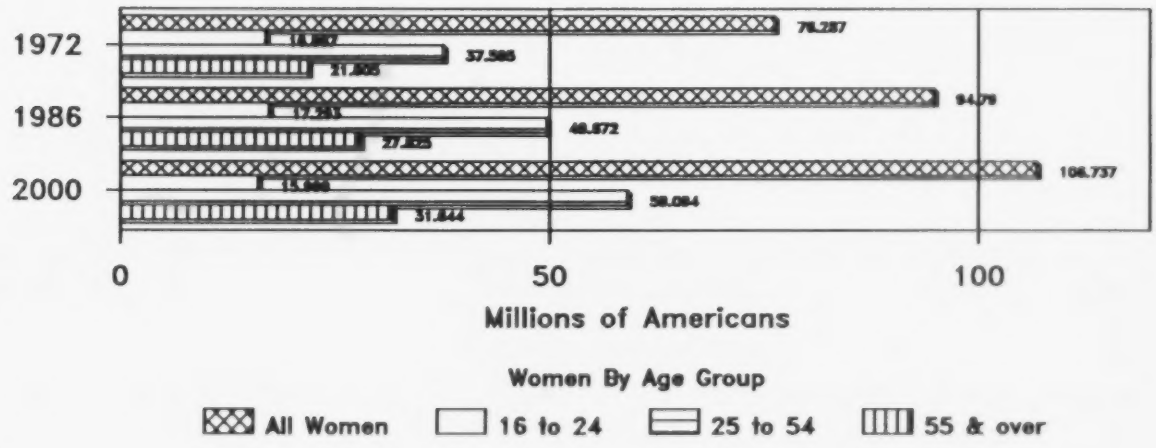
Source: Bureau of Labor Statistics

Figure 2.14

Noninstitutional Population National Figures, 1972–2000 Civilian Males Only



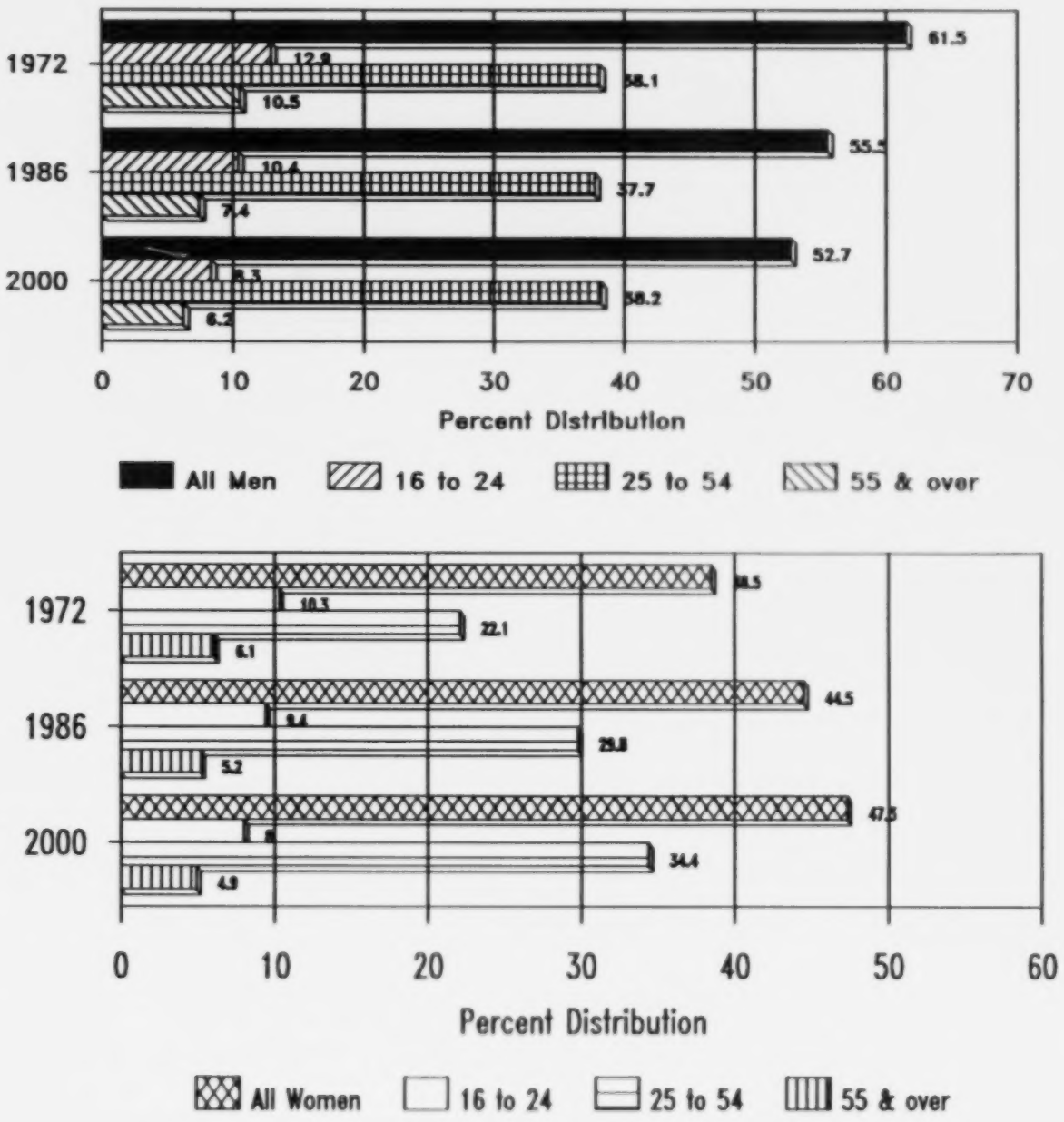
Civilian Females Only



Source: Bureau of Labor Statistics

Figure 2.15

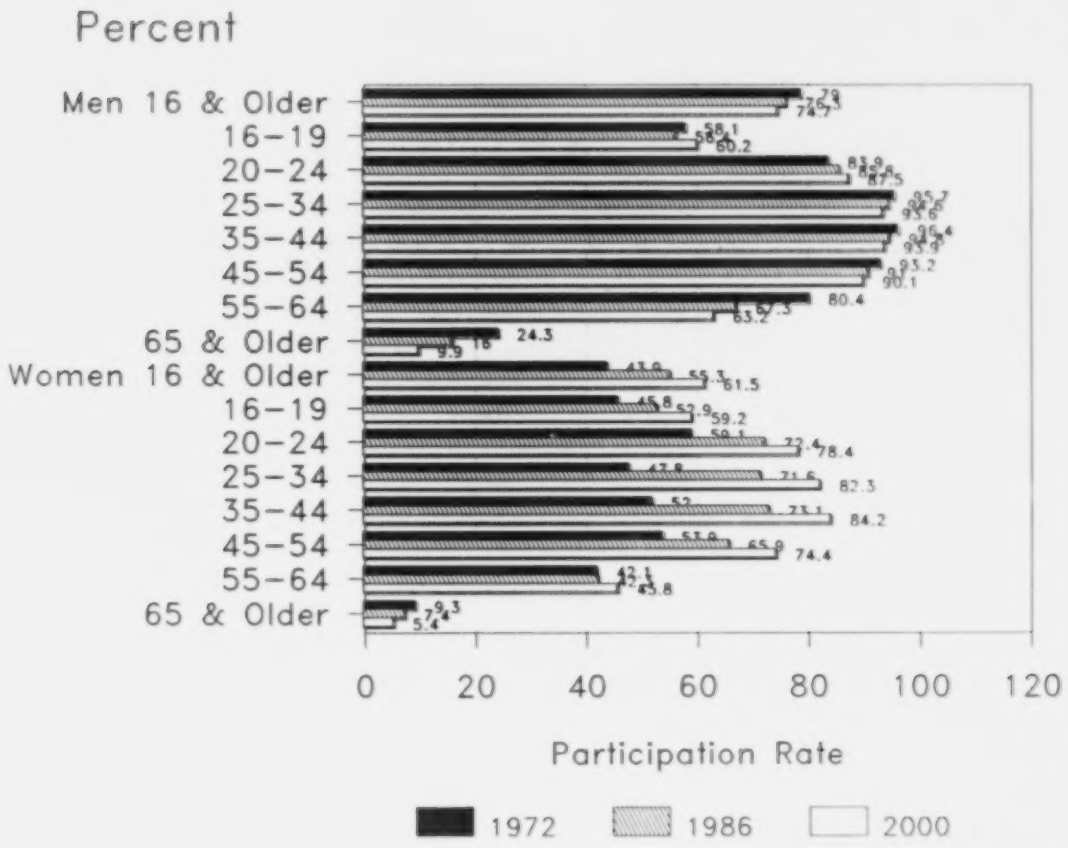
Civilian Labor Force
National Figures, 1972–2000
Percent of Men/Women in Labor Force



Source: Bureau of Labor Statistics

Figure 2.16

Civilian Labor Force
Participation Rate
National Figures, 1972–2000



Source: Bureau of Labor Statistics

Figure 2.17

tana of the numbers of women in the workforce to the year 2000, Montana is expected to follow these national trends.

Montana Women Workers
Labor Force Participation
Change, 1950–1987

Sources: Montana CPS Files,
U.S. Bureau of the Census

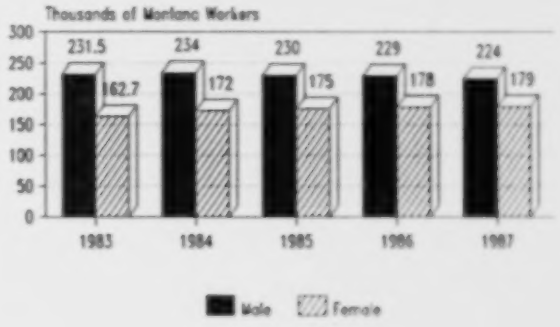
Figure 2.18

Women have become a vital part of the Montana workforce. Figure 2.18 shows the recent rapid growth of women in the workforce on a percentage basis since 1950, up to the present record level of 58.2 percent. Figure 2.19 shows that in actual numbers, women continue to increase their role in Montana's workforce even while the number of men in the workforce declines. As the age structure of Montana's population shifts in the manner described earlier in this chapter, women in Montana will assume an even more substantial position in the workforce.

MINORITIES

Nationally the reduced growth in population, coupled with reasonable growth in new jobs, are forces that are expected to offer opportunities to minorities in the workplace. The glow of these expectations, however, is

Montana Civilian
Labor Force, 1983–1987
Male and Female Components



Source: 1983–1987 CPS Files,
Montana Department of Labor

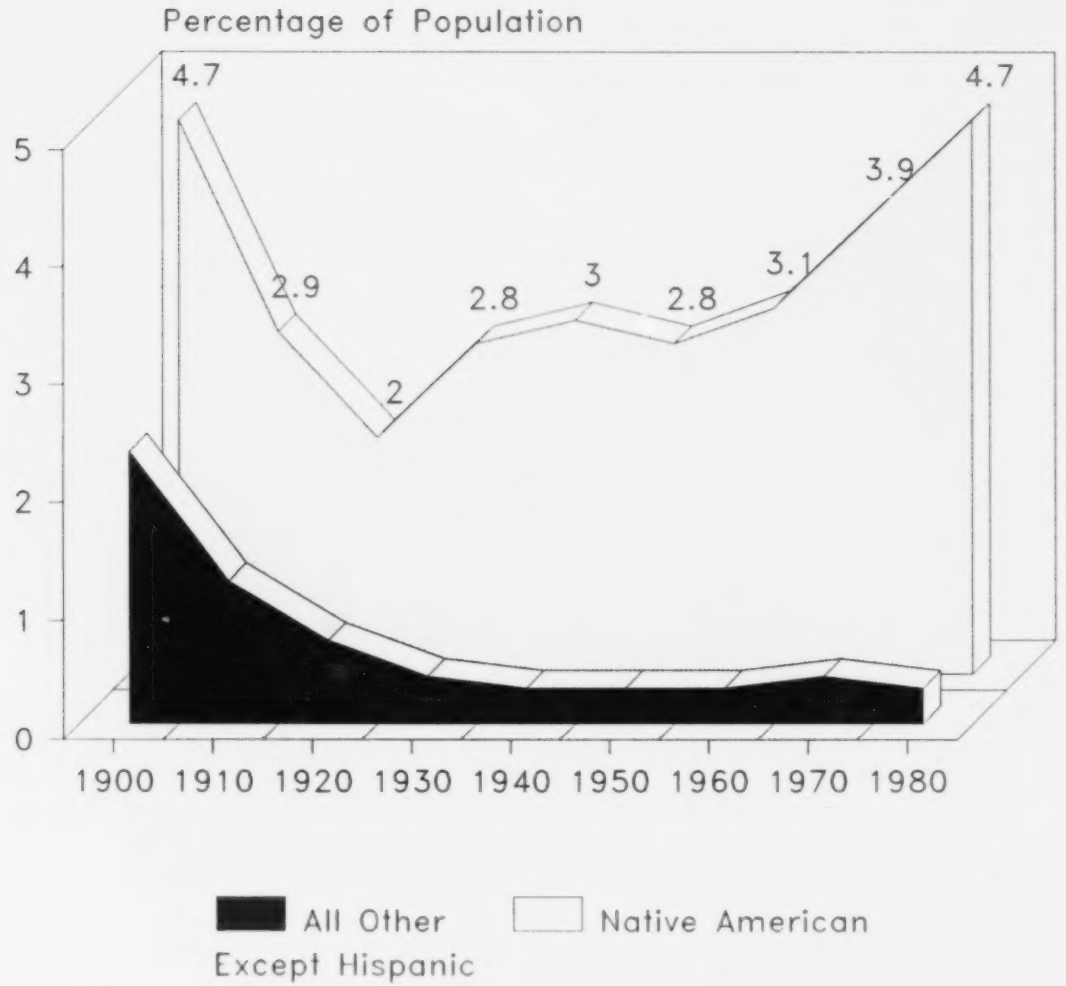
Figure 2.19

dimmed by the more demanding nature of new jobs in the future, the higher levels of educational achievement that will be necessary to obtain many of these new jobs, and the disproportionate number of those in minority groups who are undereducated. Chapter Three below discusses new skill and educational levels for jobs by the year 2000.

While nonwhites are expected to constitute 30 percent of the new additions to the national workforce by the year 2000, this does not appear to be the case for Montana, and for a number of reasons. First, Montana is relatively lacking in minority groups, with the Native American race, the largest minority group, comprising less than 5 percent of the state's population. Montana's second largest minority group, those of Hispanic extraction, makes up just over one percent of the state's population. Montana in addition has Black, Chinese, Japanese, and Laotian/Meo minorities. No other minority group in Montana, however, represents even as much as one half of one percent of the state's population.

There are other reasons we cannot expect minorities to play as significant a role in Montana as is expected nationally. A second reason, according to U.S. Bureau of the Census statistics, is that Montana is not in the "flow" of significant migration among states nationally, and can therefore expect no great infusion of minorities. In point of fact the U.S. Bureau of the Census expects Montana to lose rather than gain population through migration. Finally, without significant educational intervention, any Montanan is going to be penalized---through lack of job skills---in competition on the job market. Historically minorities have had some of the greatest obstacles to overcome in learning job skills. Without new and unusual intervention, Montana's Native Americans cannot be expected to overcome this roadblock more effectively in the future than has been their experience in the past.

Montana's Minorities
Percentage of Population
1900–1980



Source: U.S. Bureau of the Census

Figure 2.20

CHAPTER THREE

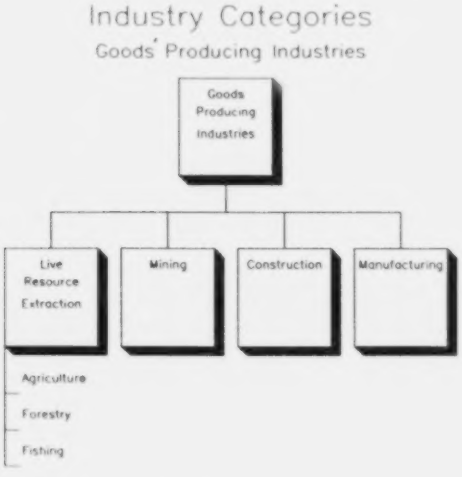
CAREERS AND MONTANA TO THE YEAR 2000-------FACTORS AFFECTING CAREER DECISIONS TO THE YEAR 2000

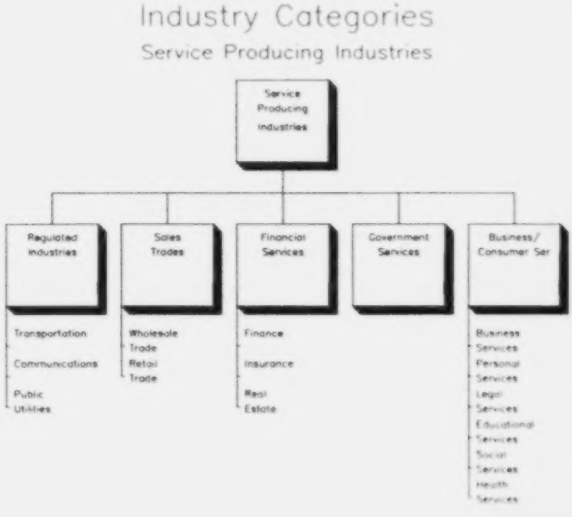
As influential as the demographic changes we have already discussed are in shaping careers and employment prospects to the year 2000, there are other major factors affecting our future. These factors include patterns in the growth of employment among various industries in Montana, changes in technology, productivity changes, changes in skill requirements for jobs, and changes in the workplace. Understanding and anticipating these changes will enable you to prepare for your future.

Section One: Employment Growth Patterns on the National Level

The Rise of the Service Economy

Several significant factors will influence the growth of new job markets in the future, with





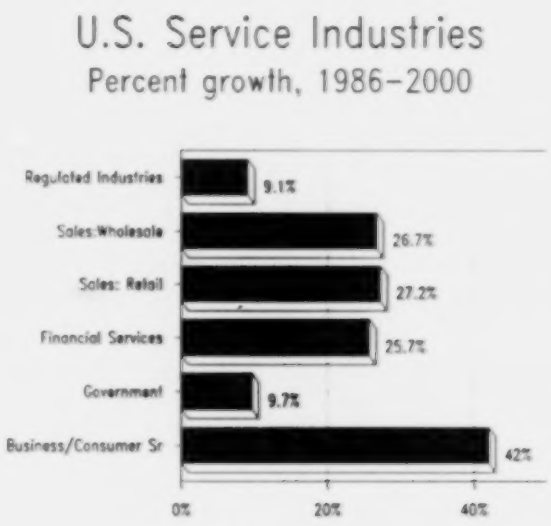
Source: U.S. Department of Labor

the shift to a "service economy" being perhaps the single most important. Basically a service economy is one in which more jobs are to be found in providing services---as opposed to manufacturing, agriculture, and other goods-producing industries---than in creating tangible products. Typical service economy jobs are in transportation and retailing, education and health care, finance and real estate, and government and utilities.

Since 1957 more Americans have been employed in service- industries than in goods-producing industries, and some historians have divided up our economic history into the periods of the agricultural era (from our beginnings as a nation to 1900), the industrial era (from 1900 to 1957), and the post-industrial or service-industries era (from 1954 to the present). These various periods are convenient ways of talking about basic changes that have occurred in jobs for Americans. American society has changed much during and between each of these economic periods, and we anticipate at least as many changes in a person's work career in the future as we have seen in the past.

Source: U.S. Dept of Labor

Figure 3.1



Source: U.S. Dept of Labor

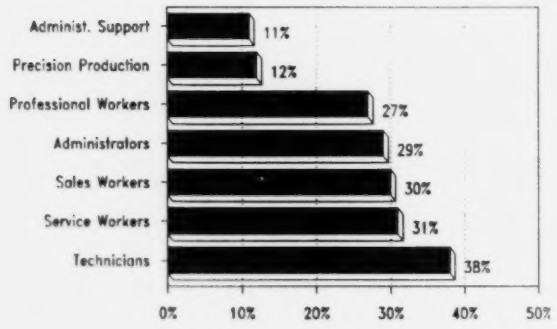
Figure 3.2

Projections for increases in jobs in the service economy on the national level indicate that even more Americans will be employed in a service economy job in the year 2000. Figure 3.1 compares job growth (as measured by wage differences) between the major industry categories of goods-producing and service-producing industries, while Figure 3.2 shows the projected increases in jobs within service-producing industries nationally. Employment in the goods-producing industries will actually decline in all areas except for construction, while generally only limited-skills jobs will decrease in the service-producing industries.

National Occupational Patterns

On the national level, employment will increase considerably in many occupations between 1986 and the year 2000. The number of technicians and related support workers will grow 38 percent, and public service workers by 31 percent. In contrast, operators, fabricators and laborers will grow only three percent, while agricultural, forestry and fishing workers will actually decline in number.

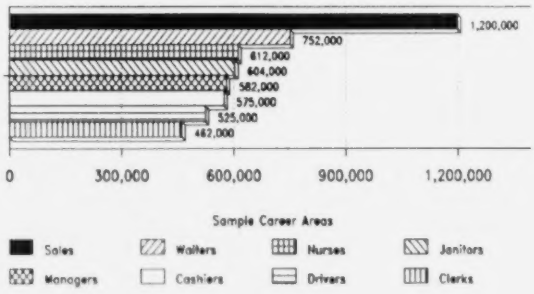
U.S. Job Growth
Percent Increase
Between 1986 and 2000



Source: U.S. Dept of Labor

Figure 3.3

U.S. Job Growth
Numerical Increase
Between 1986 and 2000



Source: U.S. Dept of Labor

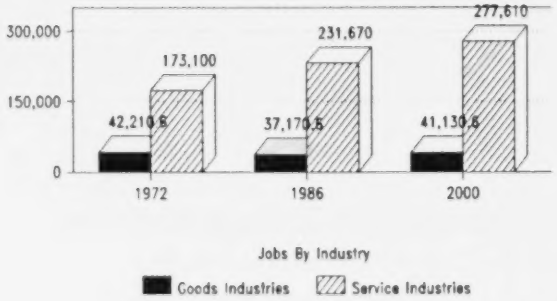
Figure 3.4

What this means in terms of total worker numbers is impressive: America as a whole will require more than 1.2 million more retail sales workers; over 3/4 million more waiters and waitresses; and more than 600,000 registered nurses and the same number of janitors and cleaners. Twelve of the twenty fastest growing occupations over this period provide health services, and four more of these top twenty occupations are in the computer field. Among occupations on the decline nationally are: farmers, down 28 percent or 332,000 fewer jobs; farm workers, down 20 percent or 190,000 fewer jobs; industrial truck and tractor operators, down 34 percent or 143,000 workers; and electrical and electronics assemblers, down 54 percent or 133,000 workers.

Section Two: Employment Growth Patterns in Montana

Much of what is projected for the United States as a whole is also projected for Montana's future. Between 1986 and the year 2000 some 49,900 new jobs are projected for Montana. Overall, Montana's goods-producing industries will provide only about the same prospect for new employment as in the past. In contrast, Montana's service-producing industries will provide more than 92 percent of Montana's new jobs. Put another way, between 1986 and the year 2000 Montana can anticipate some 3,560 new jobs annually, and 3,100 of these new jobs will be in the service-producing

Montana Job Growth
Goods & Service Industries
Between 1972 and 2000



Source: OES Matrix, MT Table E
Wage and Salary Jobs Only

Figure 3.5

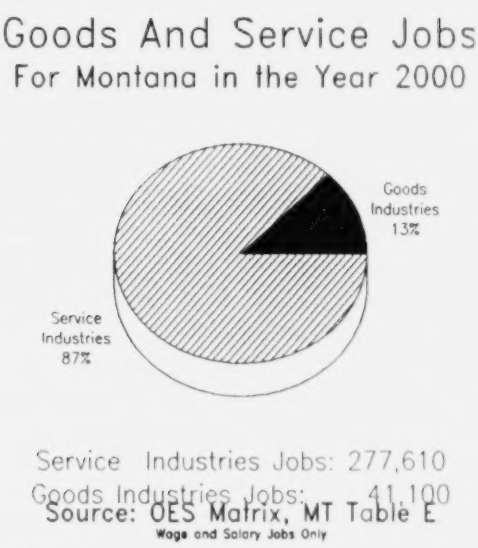

Goods And Service Jobs
For Montana in the Year 2000
Goods Industries 13%
Service Industries 87%
Service Industries Jobs: 277,610
Goods Industries Jobs: 41,100
Source: OES Matrix, MT Table E
Wage and Salary Jobs Only

Figure 3.6

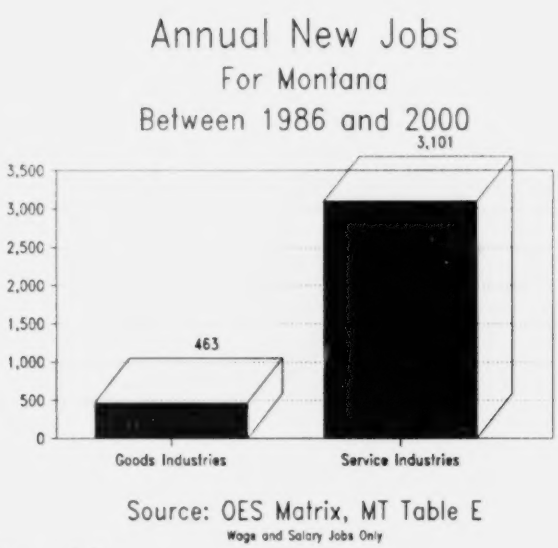


Figure 3.7

industries. The cumulative effect of this increase in service-producing industries' jobs will be to increase the already existing majority of jobs in this sector. By the year 2000 fully 87 percent of Montana's wage and salary jobs as a result will be found in the service-producing industries.

MONTANA'S GOODS-PRODUCING INDUSTRIES

Overall, there will be only very modest growth in Montana's goods-producing industries. Figure 3.8 gives recent estimates of Montana's agricultural employment, estimates that indicate static or declining job opportunities. Agricultural workers, farmers and ranchers, along with other self-employed people in small businesses, have traditionally made up about a quarter of our state's employed workers. No projections are currently available about growth in the self-employed sector for Montana to the year 2000, but national trends indicate that we should not anticipate any growth in agricultural employment. On the other hand, small businesses---particularly businesses with less than one hundred workers---nationally have experienced some of the largest increases in new jobs. According to the Bureau of Labor Statistics, in the period from 1980 to 1986 small businesses provided 41.1 million new jobs, a 17 percent increase. Depending on the number of such self-employed people operating small businesses in Montana, decreases in agricul-

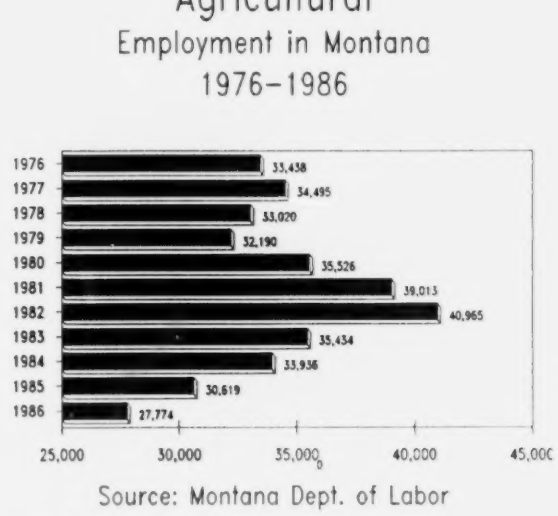
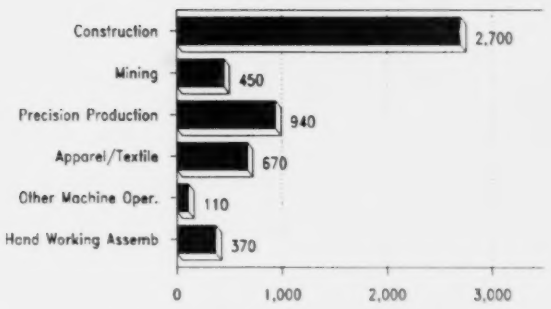


Figure 3.8

tural jobs may well be balanced out by increases in jobs in small businesses. Many of Montana's small businesses, however, are service-producing rather than goods-producing industries, and therefore are discussed in the next section on service-producing industries.

New Goods Producing Industries' Jobs
Montana, 1986–2000



Source: OES Matrix, MT Table C&E

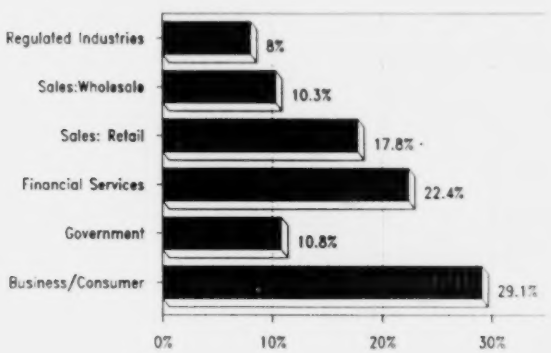
Figure 3.9

As Figure 3.9 indicates, current projections have goods-producing industries' jobs focused in a number of areas. In the construction area, for example, there will be new jobs for 670 carpenters, 170 electricians, 90 concrete finishers, 160 plumbers, and several hundred new jobs anticipated in the coal mining area. And there will be some new jobs in the precision production occupations, for example 120 precision metal workers, 70 precision woodworkers, and 90 precision textile, apparel and furniture workers. In the apparel/textile area, to cite another example, there will be some 290 new sewing machine operator jobs, and 220 new jobs for welders and cutters among the 370 new jobs for the hand workers and assemblers' industries. These increases are in all instances modest increases from the traditional numbers of people employed in these occupations. The real job growth areas for Montana between now and 2000 are in the service-producing industries.

WHERE MONTANA JOBS WILL BE: MONTANA'S SERVICE-PRODUCING INDUSTRIES

As the Montana service-producing industries graphs below indicate, Montana's greatest job opportunities for the future are located in the

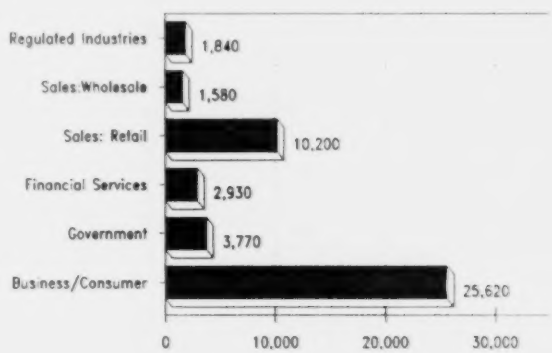
Montana Service Industries
Percent Growth, 1986–2000



Source: OES Matrix, MT Table E
Wage and Salary Jobs Only

Figure 3.10

Montana Service Industries
Numerical Growth, 1986–2000



Source: OES Matrix, MT Table E
Wage and Salary Jobs Only

Figure 3.11

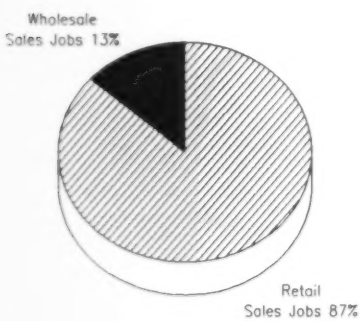
business and consumer services area. Business and consumer services jobs will increase by over 29 percent, while sales jobs follow at a close second when new wholesale and retail sales jobs are combined. These three categories--- business/consumer services jobs, wholesale and retail sales---will account for 37,400 of Montana's new jobs by the year 2000, or 75 percent of the total of 49,900 new jobs.

RETAIL SALES

Figure 3.12 below shows the very large proportion---87 percent or 10,200 jobs---of the 11,780 sales jobs projected for Montana by 2000 will be in the retail sales area. There will continue to be very modest growth in certain retail sales areas, with 80 new jobs at stores that sell building materials and/or garden supplies, for example, and 70 new jobs at businesses selling autos and recreational vehicles, and 70 new jobs at clothing stores as well. There will be somewhat better job growth for general merchandise stores (420 new jobs) and furniture and furnishings stores (620 new jobs), and other more specialized retail stores (1,480 jobs).

By far the greatest growth in new jobs in the retail sales area, however, will be for food stores and eating and drinking establishments. Projections indicate that food stores alone will experience a growth of more than 2000 new jobs, and restaurants and similar businesses

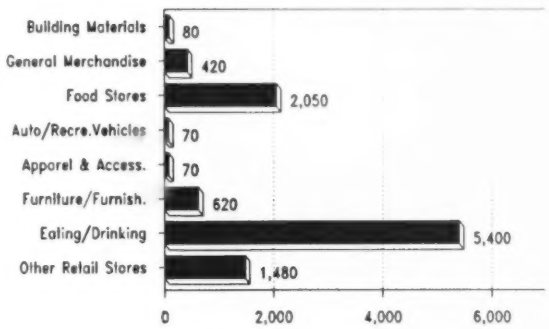
Wholesale & Retail Jobs
in Montana, 1986–2000



Wholesale Jobs: 1,580
Retail Jobs: 10,200

Figure 3.12

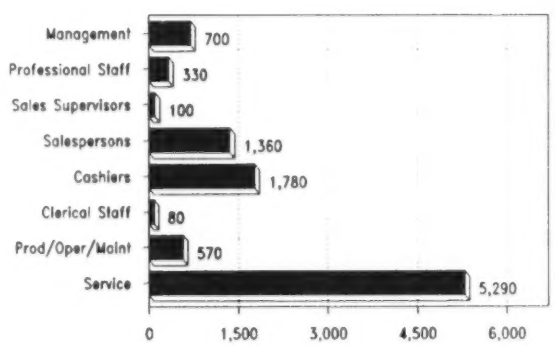
Retail Sales Jobs
By Retail Store Type
Retail Sales Jobs Total: 10,200



Source: OES Matrix, MT Table B

Figure 3.13

Retail Job Growth
Montana, 1986–2000

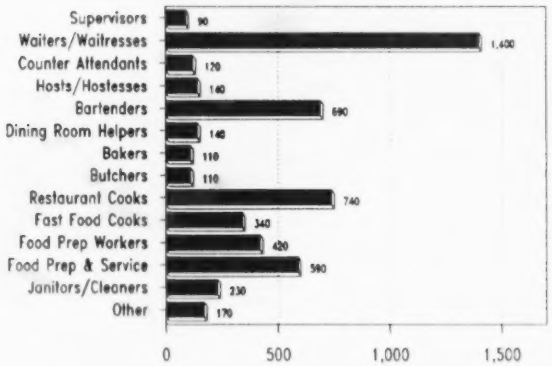


Source: OES Matrix, MT Table C5/2

Figure 3.14

will develop the largest numbers of new jobs of all the retail sales businesses---almost 5500 new jobs. These new job opportunities offer a considerable variety of work activities, not only as sales clerk, waiter and waitress, but also as cashier, supervisor and manager. Figure 3.14 provides a breakdown by major job categories of the numbers of jobs in each grouping, and Figure 3.15 provides a detailed listing of the largest job category of "service" jobs.

Service Jobs
in the Retail Sales Area

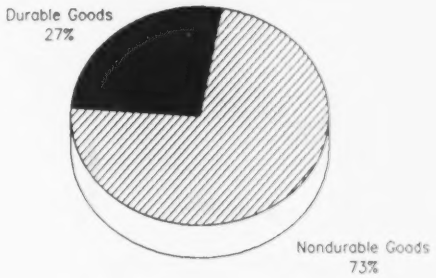


Source: OES Matrix, MT Table C5/2
Figure 3.15

WHOLESALE SALES

While the wholesale sales arena will offer somewhat fewer job opportunities, the 1,580 new jobs projected in wholesale sales are still significant. The figures below show the 73 percent total of new jobs that will occur in the nondurable goods wholesale area, and the variety and number of new jobs that will be available in both the durable and nondurable goods wholesale market. The 120 new jobs in the professional workers area includes jobs as accountants and auditors (40), purchasing agents

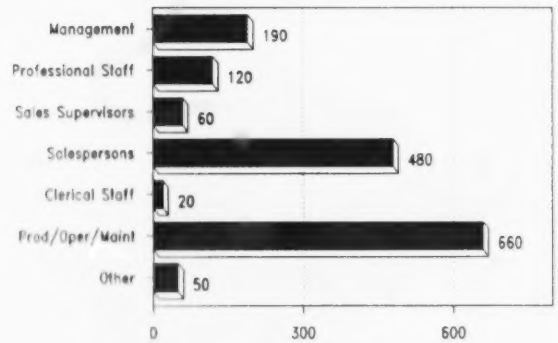
Wholesale Jobs
For Nondurable And
Durable Goods Sales



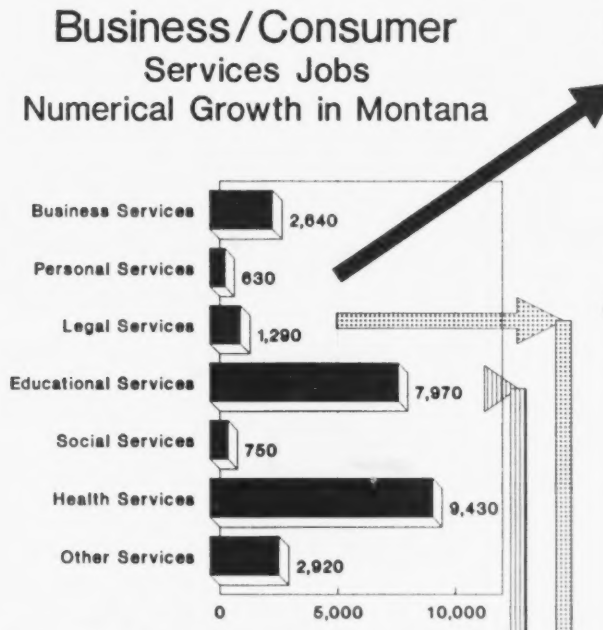
Nondurable Goods Wholesale: 1,160
Durable Goods Wholesale Jobs: 420
Figure 3.16

and buyers (50), and computer programmers (20). In the production/operations/maintenance area, there are projections for 120 new mechanics and repairers, 380 new drivers and materials movers, and 30 new supervisors.

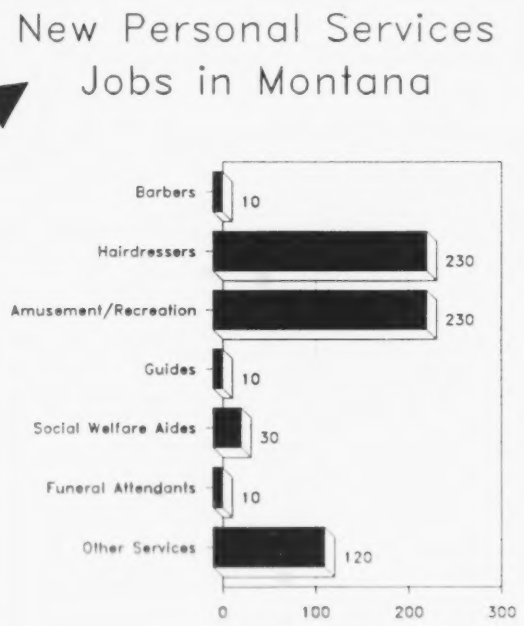
Wholesale Job Growth
Montana, 1986–2000



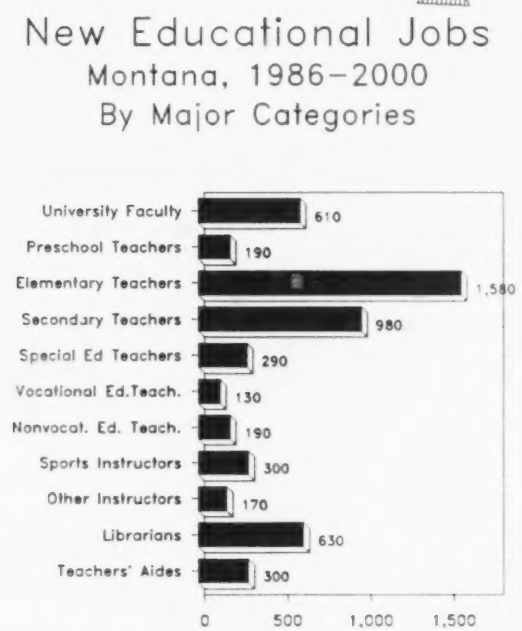
Durable & Nondurable Categories Combined
Source: OES Matrix, MT Table C5/2
Figure 3.17



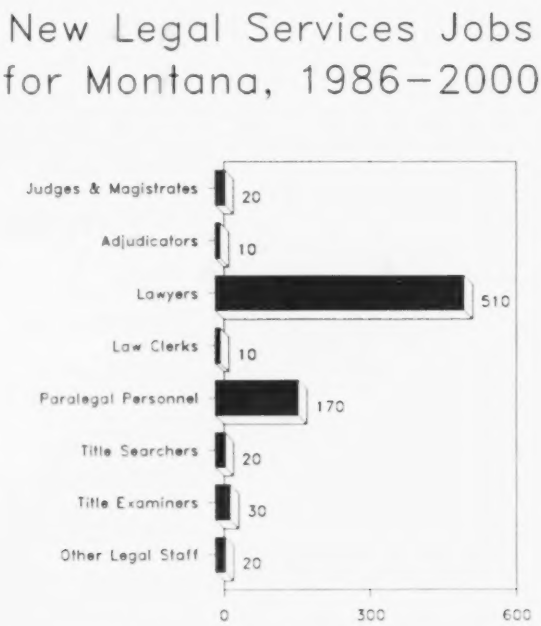
Source: OES Matrix, Montana Table B
Figure 3.18



Source: OES Matrix, MT Table C
Figure 3.19



Source: OES Matrix, MT Table C
Figure 3.20



Source: OES Matrix, Montana Table C
Figure 3.21

BUSINESS/CONSUMER SERVICES

Sales jobs are easy to understand since they remind us of the sales clerks and door-to-door salesmen that we see every day. But just what are business/consumer services jobs, and which ones will be in demand? The following graphs break down into broad categories those jobs in the business/consumer services area, and provide the numbers of jobs in each category.

As the graphs clearly show, health services, educational services, business services, and "other" services will provide the greatest opportunities for jobs, with legal services, social services, and personal services representing respectable opportunities for jobs as well. Even these categories, however, are broader than you may be used to in thinking about possible jobs in your future. What, specifically, are the jobs available in the business/consumer services area?

PERSONAL SERVICES AND LEGAL SERVICES JOBS

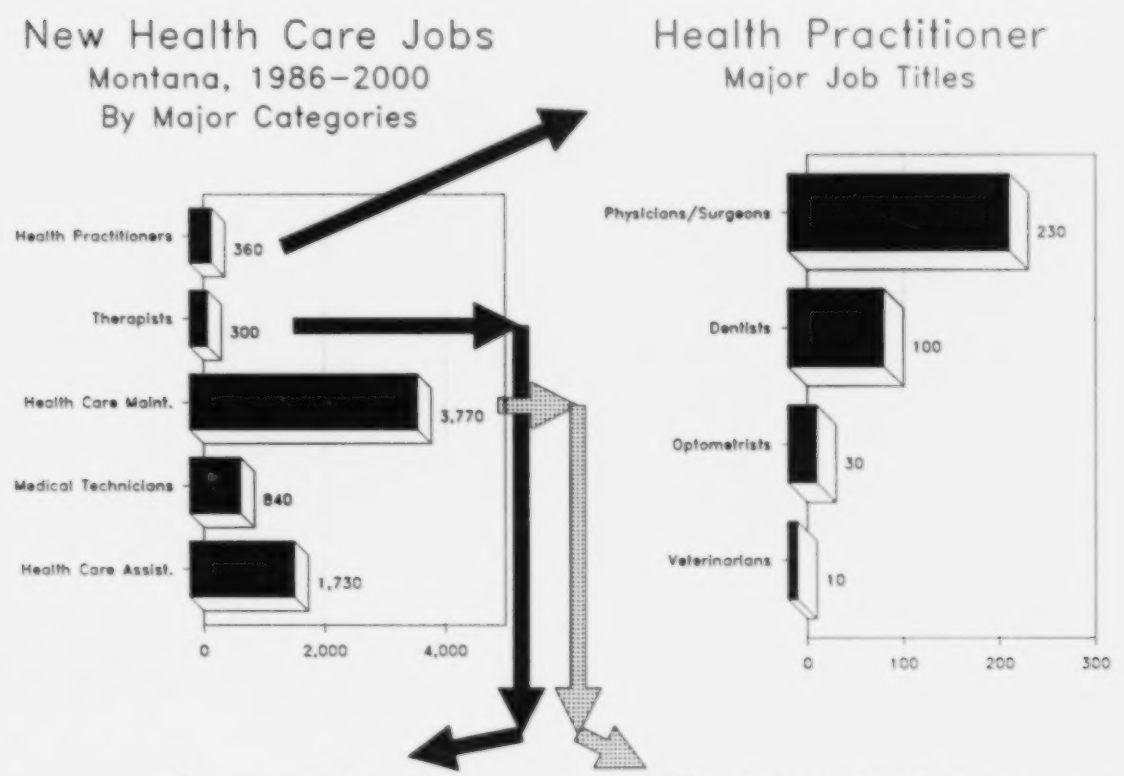
Figure 3,19 shows some of the job opportunities in the personal services occupations in Montana. Hairdressing jobs and jobs providing recreation activities are the most growth oriented in this category. Figure 3.21 indicates the substantial growth in various legal services, particularly for lawyers and paralegal personnel.

EDUCATIONAL SERVICES JOBS

As Figure 3.20 indicates, educational services is the label for university faculty and school teachers, librarians and teachers' aides. The biggest single opportunity for employment in this area is in elementary education, either as a regular teacher, a special teacher, or a teachers' aide. This growth in jobs is associated with the 'echo' of the baby boom, as the now adult children of the baby boom era will have their children in elementary school. The baby boom echo will not have reached the secondary schools to the same extent, but there will still be about a thousand new job openings in secondary education as well. The increase in jobs for pre-school teachers reflects greater child care demand at licensed day care centers as women continue to enter and remain in the workforce while raising children. There will also be about forty new openings annually for college and university faculty and teaching aides and, on average, the same number of new jobs for librarians in Montana.

HEALTH SERVICES JOBS

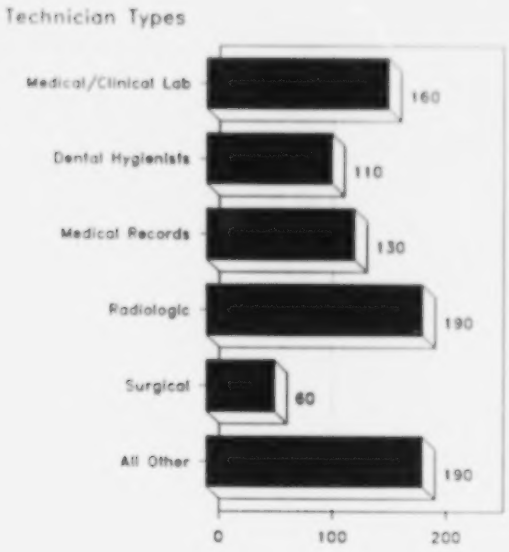
Health services are the single-largest growth area of business/consumer services jobs, and this is reflected by the diversity of job titles in this area. Figure 3.22 and the associated figures provide a graphic outline of these various job titles and the numbers of jobs in each grouping. Roughly the same number of new jobs are expected in the health practitioner and therapist fields, with most of these new jobs going to physicians and dentists, and respiratory and physical therapists, respectively. The greatest growth will be in the health care maintenance area, particularly the need for almost 3,000 more registered nurses and over 450 new licensed practical nurses. Among the increases for medical technicians, the largest growth areas will be for radiologic, medical records, and medical laboratory technicians. Finally, health care assistants as a category is the second largest growth area, with



Source: OES Matrix, MT Table C

Figure 3.22

Medical Technician
Major Job Titles



Health Care Assistant
Major Job Titles

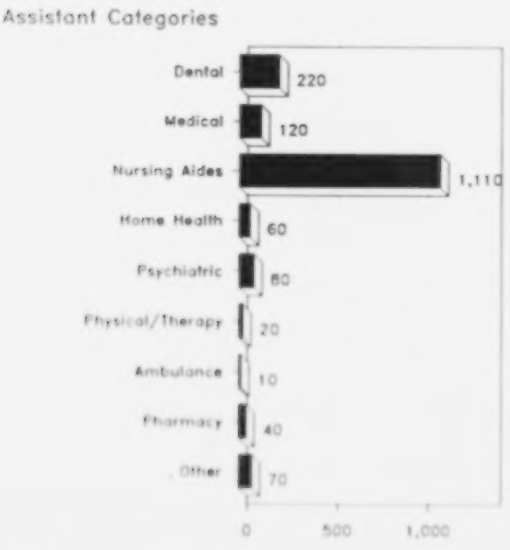
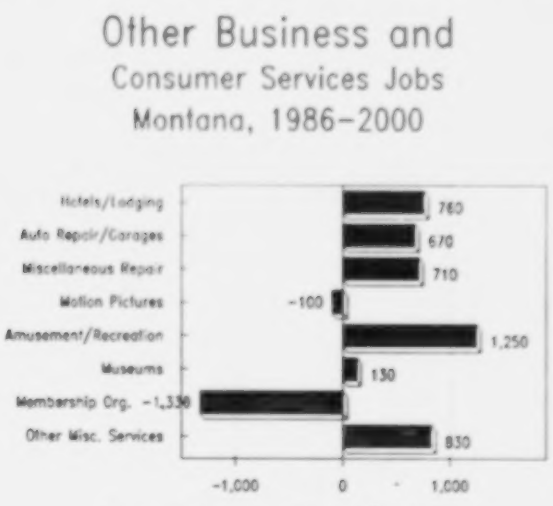


Figure 3.22 Continued



Source: OES Matrix, MT Table B

Figure 3.23

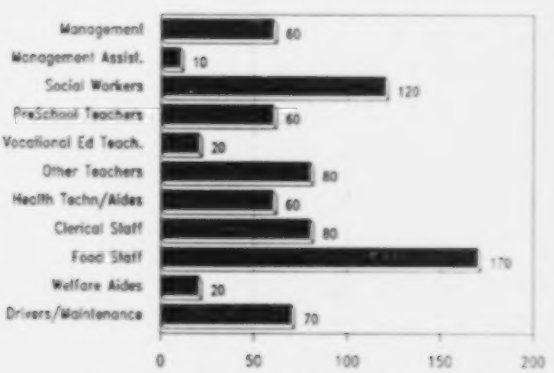
nursing aides and orderlies, dental assistants and medical assistants experiencing the largest occupational growth.

OTHER BUSINESS/CONSUMER SERVICES JOBS

The remaining 6,300 jobs in the business/consumer services area are distributed among business services, social services, and "other" services. There is a great variety among job titles and activities in these categories, ranging, for example, from certified public accountants providing budgeting expertise, career counselors offering testing and information on job skills, to quick-copy store staff providing copying and offset printing services.

Figure 3.23 shows the projected distribution of new jobs by major categories for business/consumer services, with the largest increases coming for hotels and other lodging services, and amusement and recreation services. As you might expect, most of the growth for the hotels/lodging industry is for the provision of food and beverages (280 new jobs), and maids and housekeeping services (250 new jobs). These same kinds of jobs are also primary growth areas for the amusement and recreation category, with 120 new openings for bartenders, 170 new jobs for waiters and waitresses, 130 new jobs for various cooks and assistants, and 60 new jobs for janitors. The dramatic decline in membership organization services reflects the effect of changing federal funding patterns for Native American organizations which are included under this category.

Figure 3.24 lists by major category jobs that will be coming in the social services arena. There are as many new jobs (70) for management and management assistants as for drivers and maintenance staff. Those involved in food preparation represent the single-largest categoric increase in jobs (170), while the various categories of teachers combine to make up the largest occupational group (280).

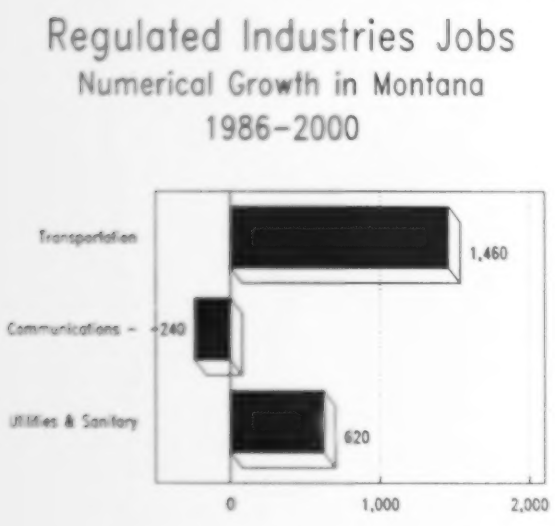


Source: OES Matrix, MT Table C

Figure 3.24

REGULATED INDUSTRIES JOBS

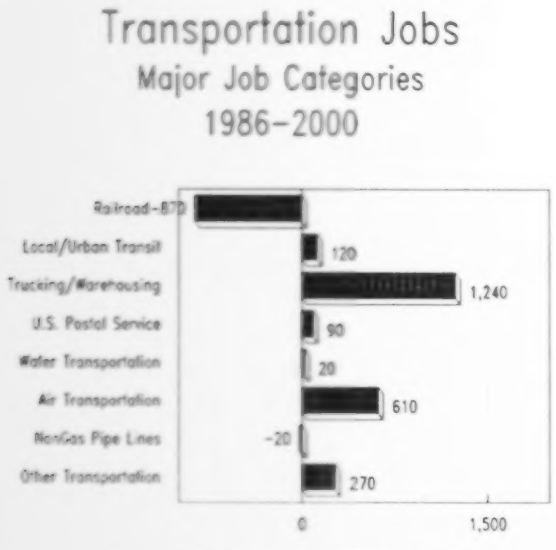
Figure 3.25 outlines the three major areas of transportation, communications, and utilities and sanitary services within the regulated industries' services category. Figure 3.26 provides a closer look at the transportation industry, and shows an overall increase of 1,460



Source: OES Matrix, MT Table B

Figure 3.25

new jobs in transportation. This increase comes in spite of a total decrease of 870 jobs in the railroad industry, and because of substantial growth in other transportation jobs, particularly trucking and warehousing. Decreases in communications jobs are led by a reduction of 70 jobs in the radio and TV announcers' profession by the year 2000, and the loss of other similar jobs, for example broadcast news analysts.



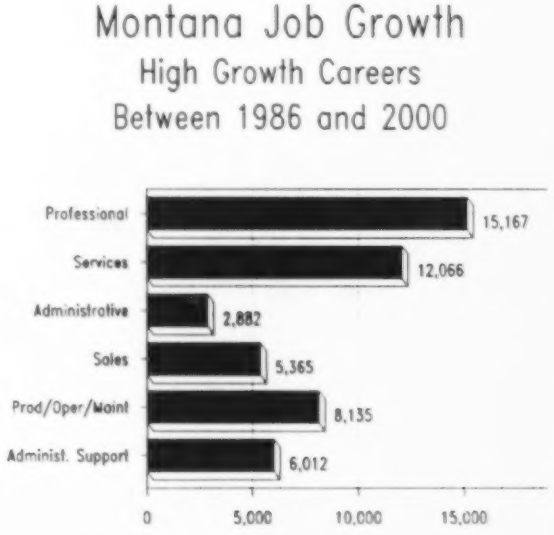
Source: OES Matrix, MT Table B

Figure 3.26

WINNERS AND LOSERS IN THE JOB MARKET

Another way of describing employment prospects more generally for Montanans is to project high and low growth careers. Figure 3.27 lists six main categories of jobs in Montana, and the numbers of workers projected for each category. Figure 3.28 lists specific jobs which are anticipated to experience the greatest increases, while Figure 3.29 lists jobs expected to decline the most in number between now and 2000.

Figure 3.28 includes two separate categories of secretaries, more general types of secretaries (seventh highest growth rate at 1,290) and legal secretaries (twenty-sixth highest growth rate at 399). If a third category of secretaries not included on this chart---medical secretaries---were included, all secretaries together would have a combined growth rate of 1,875 and as a group would be



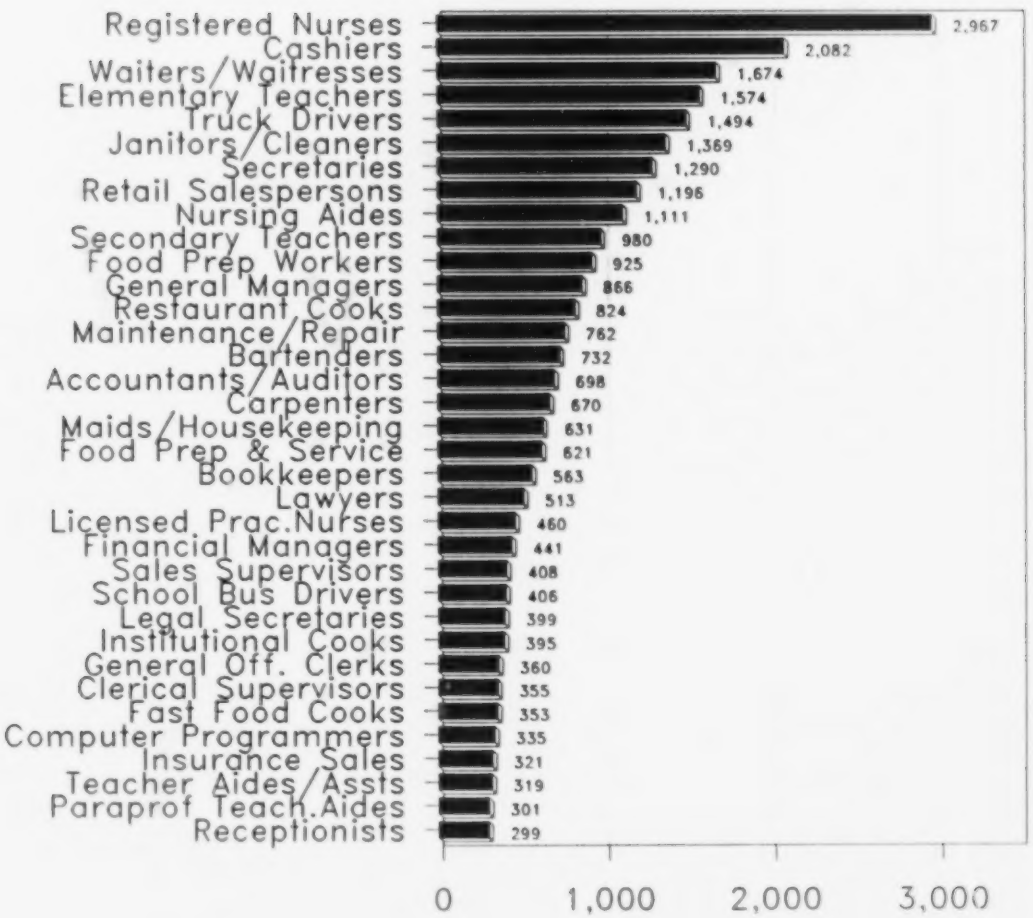
Source: OES Matrix, MT Tables E&F

Figure 3.27

Montana Job Growth

High Growth Careers

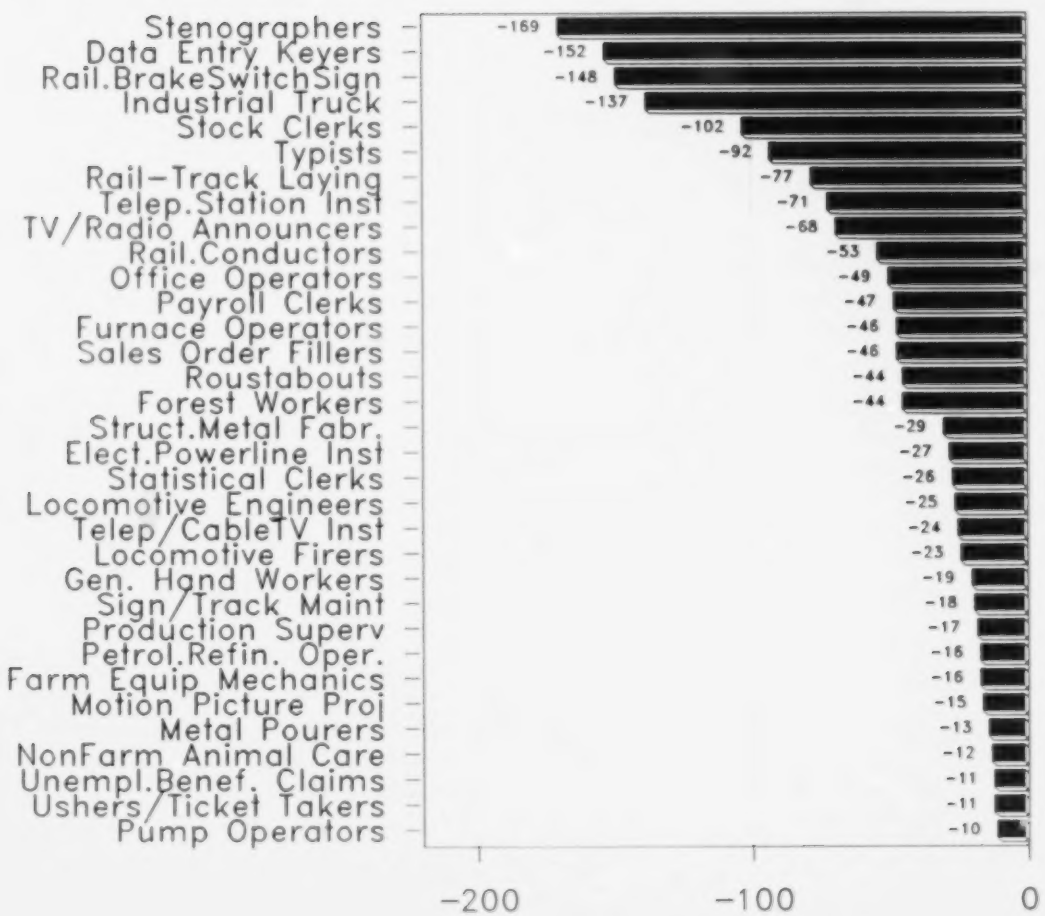
Specific Jobs



Source: OES Matrix, MT Table H

Figure 3.28

Montana Job Growth
Declining Job Areas
Specific Jobs



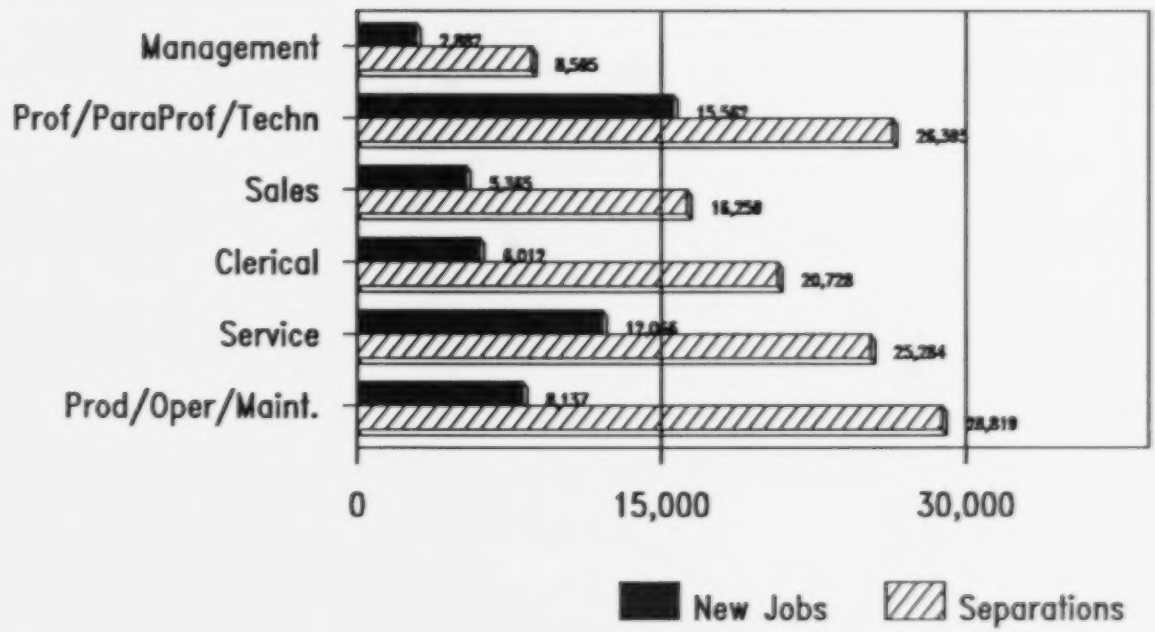
Source: OES Matrix, MT Table H

Figure 3.29

the third highest growth occupation for Montana. And if paraprofessional teachers' aides and regular teachers' aides and assistants (see bottom of chart) were combined, the new total of 620 teachers' aides would raise the new category to mid-place on this chart. It is also interesting to note that if the various manager and supervisor categories are combined, then the total of 2,070 managers/supervisors would occupy third place among high growth jobs.

The dramatic decline in jobs relating to railroads is shown on Figure 3.29, and if these specific jobs are grouped together, the total of 344 railroad brake, signal and switch operators, rail-track laying equipment operators, railroad conductors and yardmasters, locomotive engineers, locomo-

Total Job Openings
Montana Occupations
Growth vs Separations



Source: OES Matrix, MT Table F

Figure 3.30

tive firers, and signal and track switch maintenance workers would make this the single-largest job decline area on the chart. Similarly, if stenographers, data entry keyers and typists categories were combined, the resulting total of 413 office workers would then be the newest single-largest job decline area on the chart. We will discuss reasons for the declines of these groups in greater detail below.

JOB TURNOVER AND JOB SEPARATION

The nature of work has changed dramatically over the past fifty years. Gone are the days when it was common for people to take one job and make that job their entire working career. Now there is very high turnover, with people leaving old jobs and taking new jobs with great regularity. This factor also affects job availability, since high-turnover jobs are more often available. High job turnover reflects a number of aspects of our changed society, including a more frequent search for job advancement---a better paying or more prestigious or congenial job---outside of the company where one works. High turnover in jobs may also reflect a decline in job security, with fewer vested retirement programs and other employee benefits being available or accumulated.

Finally, there is the traditional factor of job separations, with individuals leaving their jobs through retirement or death, as a component of job availability. Figure 3.30 compares Montana's main occupational areas on the basis of new jobs versus jobs available through job separation, from 1986 to 2000. As you can imagine, the effect of demographics discussed in an earlier chapter can be significant. As Figure 3.31 demonstrates, there are higher separation levels for workers in the clerical, production/operation/maintenance, sales, and management areas. Such differences may reflect either the higher overall age of workers in a particular occupation, or the longer job career span of workers in a particular occupation, or a mix of both factors.

Total Job Openings
New Jobs vs Separations

- Management
  - New Jobs 25 percent
  - Separations 75 percent
- Prof/Paraprof/Technical
  - New Jobs 37 percent
  - Separations 63 percent
- Sales
  - New Jobs 25 percent
  - Separations 75 percent
- Clerical
  - New Jobs 22 percent
  - Separations 78 percent
- Service
  - New Jobs 32 percent
  - Separations 68 percent
- Prod/Operation/Maintenance
  - New Jobs 22 percent
  - Separations 78 percent

Figure 3.31

SECTION THREE: CHANGES IN TECHNOLOGY

HIGH TECHNOLOGY AND ITS IMPACT

Every time period and place has its own particular technology. Montana's pioneers brought along firearms, barbed wire, the plow, the train, and the telegraph to help settle our state. These inventions were the high technol-

ogy of that period and gave Montana's settlers the "edge" they needed to succeed. Today's high technology includes computers and robots which are having much the same profound change on how Americans live and work.

COMPUTERS

Information storage and information processing are catch phrases for the uses of computers, and in an era some call the information age their importance is immense. In their brief history computers have made astonishing advances; small desktop computers today are more powerful than the "advanced" computers used to put an American on the moon in 1968. And the desktop computers of the year 2000 will be at least as powerful as the mainframe computers of today. The jobs of today's stenographers, data entry keyers, typists, and other jobs listed on Figure 3.29 will have decreased by the year 2000 because computers will do many of these tasks. Computers will read, take dictation, and perform many other jobs currently handled by people. In addition, certain mechanical/physical tasks such as harvesting potatoes may be performed completely by mobile computers known more popularly as robots. Computers will be much more extensively spread throughout the workplace, which will also include the home. As a result a large number of traditional occupations, both in the service-producing and goods-producing industries, will demand computer literacy and the ability to work in an automated environment.

Computers are evolving in other ways as well. Not only are the desktop computers of today more powerful than the mainframe computers of the past, but the ease with which they can be used has been greatly improved. As time goes on more and more computers, and the software that runs on them, can be described as "user-friendly," with the programs for example being run through screen graphics called icons, or images of the functions the software can carry out. Gone are the days when high computer priests in white laboratory coats were the only people allowed near computers. Computers have become just like the traditional office typewriter; a labor saving device anyone can use and should know how to use. According to a national study done in 1984 by the U.S. Bureau of the Census, 30 percent of children in the United States have computer experience. According to the same study, about one-fourth of the nation's working adults use computers at work.

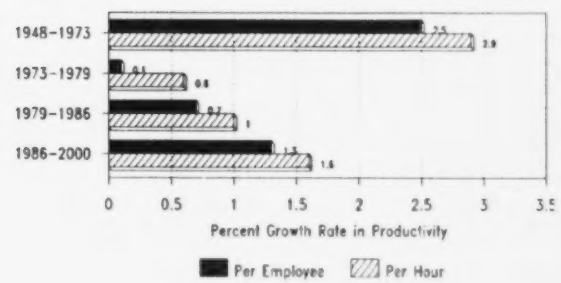
"SUPER" SYSTEMS

Other high technologies are also being swept along with the capacity of computers to help us analyze information, including superlinks, supermaterials, and superorganics. Computers will be linked together with increasingly sophisticated physical and electronic links, including glass fiber optics. This new level of linkage will allow much quicker and greater sharing of information. A second new high technology includes a new generation of synthetic materials, some replacing traditional materials and others used as a coating to greatly extend the life of existing products. Projections are that these new materials will cause a further reduction in the need for traditional manufactured goods. Finally, the new industry of biotechnology is breeding---in the laboratory---a new generation of plants, animals, bacteria and viruses that should greatly increase agricultural productivity and improve medicine and health care options. These supersystems are so new that their full impact on the future is difficult to project, but the combined result of their force for change will be enormous.

SECTION FOUR: PRODUCTIVITY CHANGES

Productivity is a measurement of goods or services produced per unit of investment. Initially applied in the goods-producing industries where specific counts could be made of goods produced in a certain factory by a certain number of workers, productivity has also been applied as a measuring technique to the service-producing industries, where exact counts of services produced are less easily determined. Determining productivity has become an important way to measure the comparative "efficiency" of a company or industry or group of industries to others, and the U.S. Bureau of Labor Statistics has its own Office of Productivity and Technology to coordinate analyses of data for determination of productivity. Economists argue over how to interpret productivity, but agree overall that increased productivity is good, that there have been significant changes in productivity recently, and that these changes can represent competitive advantages between and among certain industries and nations. Figure 3.32 below provides some historic information on changes in gross national product per employee as a reflection of productivity, and presents the information based on the percentage of growth rate. The projected productivity increases to the year 2000 also included in Figure 3.32 are based on sustained growth in investment and the movement of much of the labor force into prime working-age years.

National Productivity
Real GNP per Employee
Business Sector Output



Source: Bureau of Labor Statistics
Office of Productivity and Technology
Figure 3.32

PRODUCTIVITY GAINS THROUGH CONSOLIDATION

Some productivity has been brought about through physical and economic consolidation. As automobiles became the main means of local transportation in America, for example, shopping malls became a concentrated point at which goods and services could be obtained, and the shopping habits of many Americans were transformed. Similarly, large grocery chains have developed whereby food and other items are purchased in large quantities at low prices and resold at lower prices than available at small local grocery markets. From a productivity standpoint the large grocery chains are more efficient than local "mom and pop" markets, because the chains make more profit and still sell at lower prices. As another example, small family farms have been purchased by agri-business corporations, and the large plots of consolidated land are farmed by fewer workers utilizing highly mechanized equipment and produce more crops. Productivity gains in the above examples have come about through a reshaping of the local, state, and national economy, and reflect economic realities and processes that will continue at least to the year 2000.

PRODUCTIVITY GAINS THROUGH HIGH TECHNOLOGY: COMPUTERS AND ROBOTS

Agriculture has been one of the most changed industries over the past one hundred years under the impact of increased mechanization, consolidation, and biotechnologic changes. Farms that employed 65 percent of America's workers in 1850 require three percent today. Some economists project much the same changes---even fewer workers, more mechanization, more productivity---for goods-producing industries in the next century. According to this analysis, manufacturing in the twenty-first century will require as few human and other resources as today's agriculture.

If/when this occurs, it will have been made possible by computers. Central office computers are increasingly involved in coordinating the actions not only of planners and marketing experts but regular management staff at factories. And on the assembly lines specialized computers with robotic arms and other appendages already work around the clock to meet the schedules imposed by central office computers. Japan currently leads the world in the percentage to which its factories are robotized, and in research in the high technology arena of robotization. Detroit and other American manufacturing centers are already being challenged and transformed by robotization.

To the extent possible, service-producing industries are also utilizing computers and robots more than in the past, and will continue to do so. We are relatively familiar now with the the automatic laser bar code reader system at the checkout stations of large stores, but this is just a step toward full automation. Full automation in the future will include insertion of a credit card in a reader, customer selection of items he or she wishes to purchase, and automatic packaging of these items for the customer to carry home. Because of the superlinking among computers discussed earlier, that customer might have made those choices at home through a home computer. The labor-intensive nursing home industry, as another example, will also be subject to increased automation. Robots will be capable of assisting patients in reading, eating and walking, and cleaning residents' floors.

In all these instances, the intended result is greater productivity, be it more goods produced less expensively, or more services delivered at lower cost.Since computers will touch almost all phases of economic life by the year 2000, all prospective workers should learn how they might use computers on the job.

SECTION FIVE: EDUCATIONAL REQUIREMENTS---WHICH SIX EMPLOYERS WILL YOU HAVE?

According to the Bureau of Labor Statistics, based on past data the average worker will have six employers in the course of a lifetime. Job changes will be at least that frequent in the coming decades, and a common alternative to job change is ominous. A laid off worker today has a one-in-twenty chance of getting retrained for a new job and an 80 percent likelihood of either finding no job or one that pays much less than than the previous job.

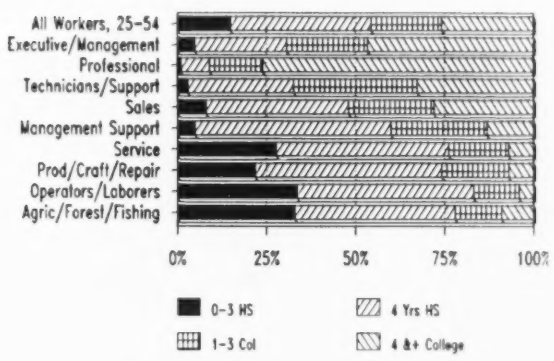
NEW JOBS WILL MEAN NEW AND MORE SKILLS

Since tomorrow's workers will be looking at work careers with at least six different employers and different jobs, everyone should be particularly conscious about designing maximum flexibility and breadth into their educational careers. Some kinds of specialized training may in fact be over-specialization which can lead to unemployment. Employment for advanced aero-space engineers, for example, fluctuates with the interest in Congress in new weapons systems and space exploration.

FORMAL EDUCATIONAL LEVELS

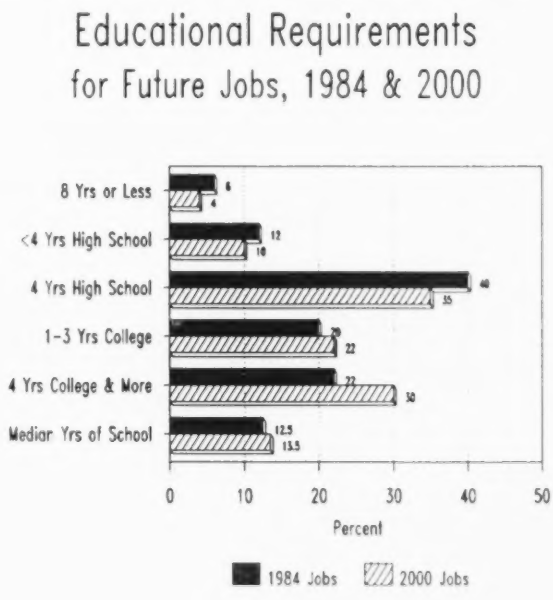
Figure 3.33 lists the educational attainment of America's current workforce, first the average background of all workers and then the attainment level of major occupational groups. Educational attainment categories are: 1) less than four years of high school; 2) four years of high school; 3) one to three years of college; and 4) four and more years of college. Those occupational groups paid higher salaries are also those required to have more education.

Figure 3.34 compares jobs available nationally in 1984 with those in the year 2000, on the basis of years of education, and adds the additional educational attainment category of "eight years or less" of education. According to this data, the median or average number of years of schooling attended to obtain a job will increase by almost another year, to thirteen and a half years. The high school diploma that currently is required for 58 percent of America's jobs will provide an opening to only 49 percent of those jobs by the year 2000. Notable also is the fact that almost a third of the new jobs created between the present and



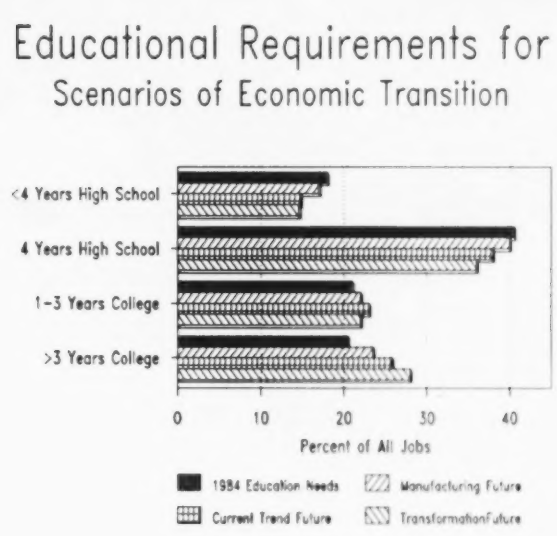
Source: U.S Dept of Labor

Figure 3.33



Source: Bureau of Labor Statistics

Figure 3.34



Source:Office of Technology Assessment

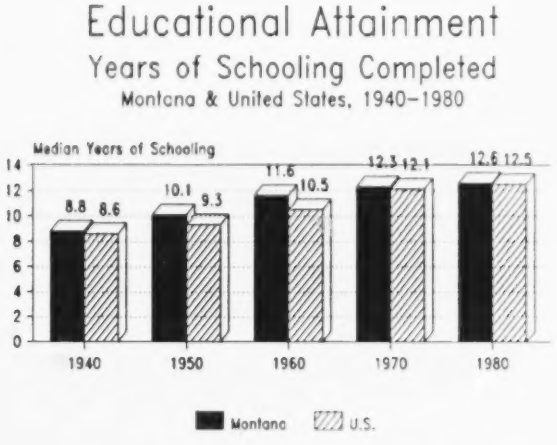
Figure 3.35

the year 2000 will be filled by college graduates.

The recent study of the Office of Technology Assessment entitled Technology and the American Economic Transition: Choices for the Future examines a number of directions our economy may take between now and 2005. These scenarios include: 1) continuation of the economy along present trend lines; 2) a resurgence of the manufacturing sector in the American economy; 3) stagnation in the economy; and 4) a transformation based on the implementation of new technologies into the economic scene. Under all four scenarios education is a key to a better job, and in all four instances job requiring less education are those which are also projected to be fewer in number, as portrayed in Figure 3.35.

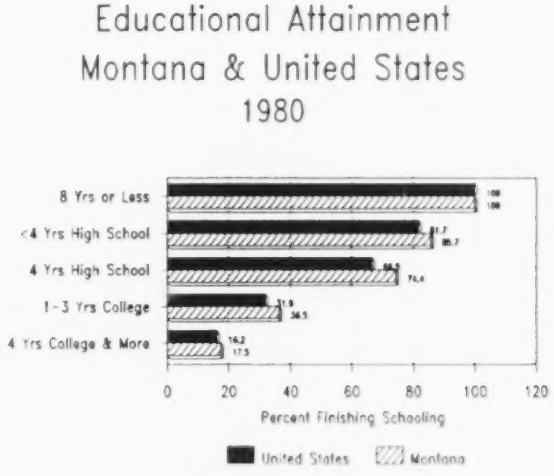
MONTANA'S CURRENT EDUCATIONAL STATUS

Figure 3.36 compares Montana and the United States as a whole in terms of years of education completed. While the median years of school completed describe all of the population, both within our state and nationally, Figure 3.36 also reflects the educational level of the workforce as well. According to this information, Montana has always had a more highly educated workforce than the national norm, but Montana's superiority has eroded



Source: U.S. Bureau of the Census

Figure 3.36



Source: U.S Bureau of Census

Figure 3.37

over the past few decades. A comparison between Montana and national data on the varying percentage of different kinds of schooling is perhaps more revealing. Figure 3.37 demonstrates the much higher achievement levels for Montanans 25 years and older versus national norms.

EDUCATION AS COMPARED TO JOB SKILLS

Education in the classroom does not always directly equate to job skills. Some educators suggest that the ability to flex---to transfer skills from one job to another---may be one of the most important skills to learn and keep in mind as you are learning other skills. Put another way, you need to be conscious about what skills to learn, and also recognize how certain skills may be transferable and therefore of particular value. Other educators state that "flexpertise", the ability to continually adapt individual knowledge and skill, is perhaps more important than technical expertise in maintaining employment in the future job market.

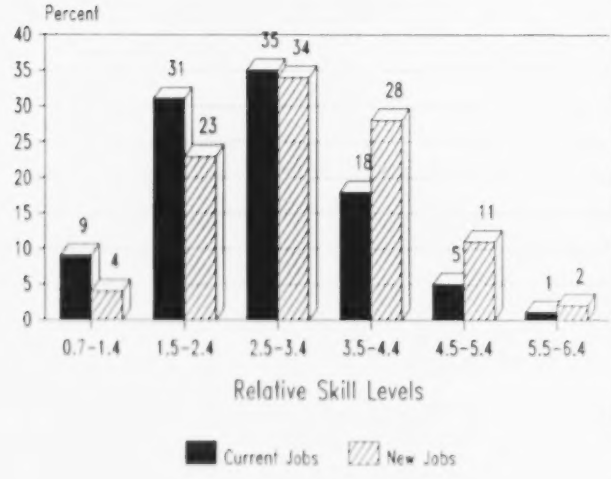
Certain kinds of skills will be in greater demand than others, and the general rule of thumb is that more advanced skills will provide much better opportunities for jobs and working career advancement. The greatest opportunities for jobs will be in the professional, technical and sales fields requiring the highest education and skill levels. In contrast, fields requiring the least amount of education are also those areas experiencing the greatest decline in job opportunities.

SKILLS ANALYSIS OF JOBS

As a way of dramatically identifying changing expectations in skill levels, the Hudson Institute has assigned numerical ratings to various jobs according to the math, language, and reasoning skills they require and then ranked these jobs, current and projected, by skill levels. The results are significant, with only 27 percent of new jobs falling into the lowest skill categories while 40 percent of current jobs fall into the same skill categories. The year 2000 represents a real contrast, since 41 percent of all new jobs are in the three highest skill groups compared to only 24 percent of current jobs. In short, the more effective your math, language and reasoning skills, the better your prospects will be for a job.

Low Skill Jobs Decline

National Patterns



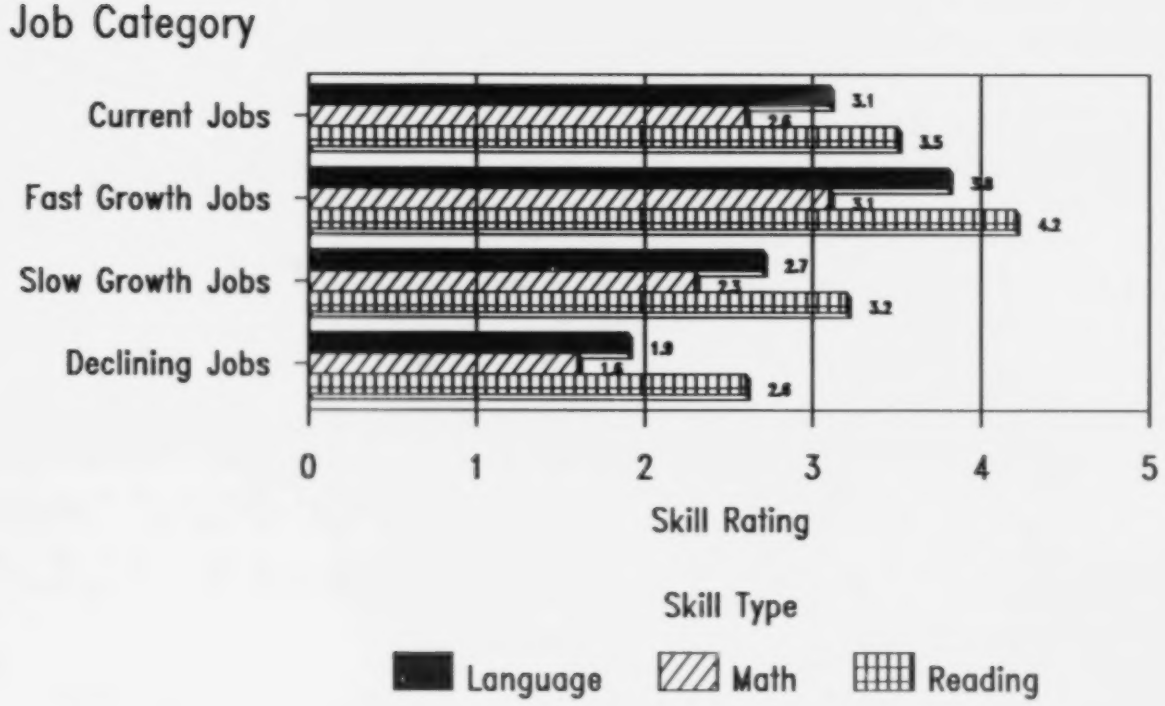
Source: Hudson Institute

Figure 3.38

Representative Jobs (See Figure 3.38 for relative skill scale numbers)

Natural Scientists	5.7
Lawyers	5.2
Engineers	5.1
Management	4.4
Teachers	4.2
Technicians	4.1

Language, Math And Reading Skills Needs



Source: Hudson Institute

Figure 3.39

Marketing and Sales	3.4
Construction	3.2
Administrative	2.9
Service Occupations	2.6
Precision Production	2.5
Farmers	2.3
Transport Workers	2.2
Hand Workers	1.7
Helpers & Laborers	1.3

The Hudson Institute has grouped this information in yet another fashion to make clear the value of developing advanced skills. Figure 3.39 compares the job categories of all current jobs, jobs expected to grow fast and slow, and jobs expected to decline by the year 2000, by the three skill areas of language, math, and reading. This comparison confirms that jobs projected to show the greatest increases in new job openings will require higher skill levels,

Figure 3.40 **SKILL LEVELS FOR SELECTED JOBS**

JOBS	READING LEVEL	MATH LEVEL	LANGUAGE LEVEL	SPECIFIC VOCATIONAL PREPARATION
Registered Nurses	5	4	5	7
Cashiers	2-4	1-4	1-3	2-6
Waiters and Waitresses	2-3	1-3	1-3	3-6
Teachers, Elementary	5	2-3	4-5	7
Truck Drivers	3	1-3	1-4	2-4
Janitors & Cleaners, excluding Maids	1-3	1-2	1-3	2-3
All Other Secretaries	4	2-3	4	3-6
Retail Salespersons	3-4	1-3	2-4	2-5
Nursing Aides & Orderlies	3	1-2	2-3	3-4
Teachers, Secondary School	5	2-4	3-5	7-9
Food Preparation Workers	2-3	1-2	1-3	1-5
General Managers & Top Executives	4-6	3-5	4-6	6-9
Cooks, Restaurant	3-4	2-3	2-3	5-7
Maintenance Repairers, General Utility	4	3-4	3-4	7
Bartenders	2-3	1-2	1-2	2-3
Accountants & Auditors	5	5	5	6-8
Carpenters	3	3	3	7
Maids & Housekeeping Cleaners	2	1	1-2	2
Food Preparation & Service	2	2	2	2
Bookkeeping & Accounting Clerks	2-4	1-4	1-4	2-6
Lawyers	6	4	6	8
Licensed Practical Nurses	4	3	4	6
Financial Managers	5	4-5	4-5	7-9
Sales Supervisors	3-5	2-4	3-5	5-8
Bus Drivers, School	3	2	2	5
Legal Secretaries	4	2	4	6
Institutional Cooks	3-4	1-2	2-3	5-7
General Office Clerks	2-4	1-3	2-4	2-6
Clerical Supervisors	3-4	2-5	2-5	5-8

This information was taken from "Montana Job Growth," High Growth Careers.

and conversely jobs declining in number or expected to show only slow growth will require lower skill levels.

Montana's State Occupational Information Coordinating Committee (SOICC) has recently compared skill levels for selected high growth jobs in Montana selected from among those listed in Figure 3.28 above. SOICC's skill level analysis of some of these jobs is listed in Figure 3.40. According to this information, higher paying jobs clearly require higher skill levels and most often longer training periods. Further information about what these skill levels mean, and the amount of time needed to complete the training required for success in these jobs, is provided in the appendix at the end of this publication.

Perhaps even more important than the clear trend toward increased skill needs for new jobs is the shift that is developing now in existing jobs and that will continue into the future. This shift is the increasing need for enhanced skills to conduct daily job responsibilities which are more complex than before and will continue to make more demands upon the worker. The great increase in new secretaries' jobs described above in Figure 3.28 reflects not only increases in jobs in the service-producing industries, but also the greater productivity expected of those secretaries. That greater productivity in turn is at least in part based on the more highly automated offices in which secretaries will be working. Almost all workers, not just secretaries, will experience this evolution toward greater expectations of productivity based on more advanced automation. As a result almost every existing job, not just those of secretaries, will be more complex and require more skills in the future than is currently the case.

FLEXIBILITY AND LIFELONG LEARNING

The need for flexibility and enhanced skills to succeed in the job market of today and the future is clear, but what about those already working---how can they enhance their skills when they are working full time? A recent survey, for example, has determined that 80 percent of the industrial arts teachers in Illinois do not know how to use computers, and yet are expected to train their students for future jobs. The answer is that learning is no longer confined to a period between childhood and the first job, but extends over a person's entire lifetime. Workers are, of course, still expected to come to their jobs with established job skills. Now and in the future, however, workers are also expected to maintain those skills and add additional ones through evening and other-than-work-time classes. And more companies are establishing their own training programs for their workers, or providing funding for employees' tuition and class materials expenses. Lifelong learning is the new educational reality for those who wish to remain in the job market.

SECTION SIX: DISPLACED WORKERS

Complex factors are shaping employment prospects for the future, and many of these forces are not under our control. Displaced workers---those who have lost their jobs through plant closings, slack work, or job abolishment after having been attached to their jobs for at least three years---often feel the brunt of these changes most directly. Sometimes these factors are among those already discussed in this chapter, as jobs are eliminated through automation, foreign competition, or increased job skill requirements.

As a point of reference, the Bureau of Labor Statistics conducted a national study on the plight of the displaced worker over the time period 1981-1986. According to this study, while two-thirds of the workers were ultimately rehired, over half of these workers found work in industries other than those they were displaced from. Moreover 44 percent of those re-employed had suffered a real loss in earnings on their new jobs.

The remaining one-third of displaced workers not rehired or experiencing the longest period of unemployment included: older workers with higher longevity on their former jobs; those displaced from relatively high paying jobs; those with less education and job skills, and those living in relatively high unemployment areas. The displaced worker represents a squandered potential labor resource, and both corporations and governmental agencies are increasingly active in developing programs intended to retrain displaced workers to bring them back into a productive work life. Chapter Four below discusses some of these efforts at retraining workers.

SECTION SEVEN: WORKPLACE CHANGES---CHANGES IN WHAT WORK MEANS

America has undergone dramatic changes in the workplace over the last two hundred years. Initially the workplace was the home farm or the small town serving the countryside, and the extended family played a major role in production. Subsequently industrialization made the town and city the focus of work, and the large, impersonal factory became the major place of employment. While the farms and the factories will not go away, the future will see smaller businesses as the new main place of work, and the real growth area will be for services rather than the heavy physical labor that has dominated our past history. In fact there will be a return to the home as a workplace with the increase in communications links and the movement of the computer into the home. By the year 2000 increasing numbers of people will work at home at their computers, analyzing data or writing, and sending their work back to a "home" office by an electronic mail process called telecommunicating. In a sense, then, technology has brought us full circle, from the cottage industry of knitting and sewing in the 1700s to the cottage industry of computing in the future.

DIFFERENT WORK PATTERNS

Not only will more work be done at home in the future, but the rhythm of work is already changing. The standard eight hour work day and forty hour week imposed in the industrial era is giving way to much greater flexibility for the employer and the employee. While forty hours remains the standard for the goods-producing industries, nationally the average work week is 38.7 hours, and varies considerably dependent on the particular industry. As examples, the average work week for financial services jobs has dropped to 36 hours, and to 29 hours in retail trade jobs. According to the U.S. Bureau of Labor Statistics, persons working less than 35 hours per week are considered part-time workers.

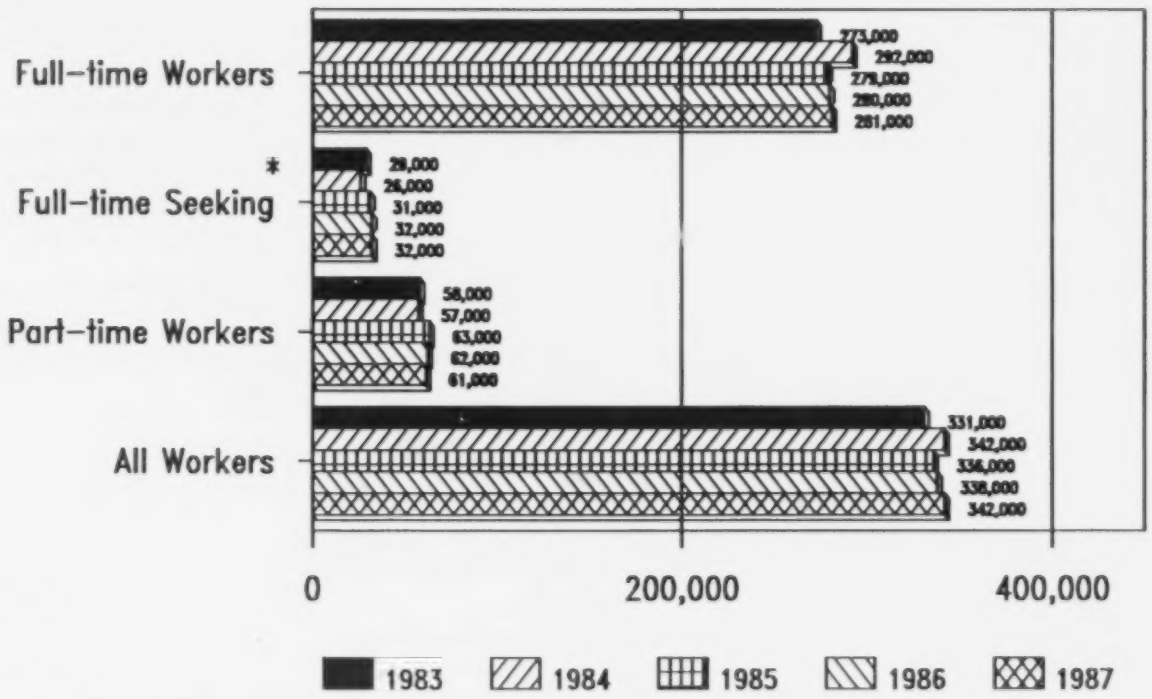
Other ways of working are also on the horizon. Flex-time---with an employee meeting a weekly threshold of forty hours but working at times convenient to both employee and employer---as a concept is widely accepted in many businesses today. Nationally nearly 30 percent of workers work on weekends. And some workers, particularly women with small children or other personal commitments,

prefer part-time work so they can spend their remaining time on other priorities. Part-time workers are also an advantage to employers who need certain skills or services on less than a full-time basis. About twenty percent of all jobs are part-time today, as compared to 15 percent in 1954, and this percentage is expected to increase in the coming decade.

Contract work---working only on a particular project for a fixed amount of time---is also becoming much more fully utilized as an option for the same reasons that part-time work is valued. Temporary work, too, is expected to increase over the next decade as employers attempt to meet seasonal peaks in customer needs.

Worker desires as they meet with the realities of the job market is another factor to be considered. Figure 3.41 shows recent data on full- and part-time workers in Montana, with full-time seeking workers being a part of the part-time workers' group. According to this

Full & Part-Time Workers Montana 1983-1987



*Part-time Workers Seeking Full-time Employment

Source: BLS Annual CPS Reports

Figure 3.41

data, part-time workers make up about 18 percent of our state's overall civilian workforce, and of Montana's approximately 60,000 part-time workers, about half would prefer to move to full-time employment.

CHANGES IN WHAT WORK OFFERS: CHILD CARE OPTIONS

There will also be substantial changes in expectations about what work offers to employees. Some of these changes will be positive, and others may not be. One example of an area in change is child care, where over five million children under the age of five have mothers working full-time. Nationally nearly two-thirds of mothers with children younger than 14 are in the work force, and child-care centers take care of fewer than one pre-school child in three of full-time working mothers. According to a 1987 survey conducted by the Bureau of Labor Statistics, only 11 percent of the nation's work establishments provide some specific child care benefits or services. These benefits or services are in the form of day-care centers for workers' children, financial assistance for child care, provision of counselling and information about local child care, or referrals. In the same survey 60 percent of all establishments reported work practices that can aid parents in caring for their children, including flex-time, part-time, and flexible leave policies. While flex-time and part-time work provides some alternatives, for those mothers working full-time jobs, more extensive child care services are necessary and will be attractive considerations for workers in job areas in which there are more openings than workers. And for those working at home at their computer cottage industry job, there is the prospect for more time with their children at home.

On the negative side, wages for people not working in the standard forty hour work week category are low now and may not improve very much except for job areas in which there are more openings than available workers. According to a study conducted by the National Association of Working Women, the average 1984 wage of part-time workers was $4.50 an hour, compared to $7.80 for full-time workers. And 28 percent of part-time workers earn the minimum wage. In addition, 58 percent of temporary employees would prefer to hold full-time positions, according to the study, but are limited to temporary work because of the lack of available alternatives. Until more employers establish clear employee job upgrading plans---programs in which their part-time or temporary employees are given clear educational "routes" to follow in order to upgrade their skills and move to better paying or full-time positions---non-full-time employee frustration may continue to be a problem.

Also on the negative side are the employee benefits not shared by people working in part-time and temporary categories. The lowest paid employees may also be deprived of coverage under Social Security and state and federal retirement and unemployment insurance coverage as well as health care plans.

SECTION EIGHT: PROJECTIONS IN PERSPECTIVE---HOW ACCURATE ARE THESE NEW JOB PROJECTIONS?

Projections about almost any topic are based in assumptions and past experience, and these assumptions and historical experience may not

adequately address unforeseen changes in our future. The effect of a terrible earthquake or drought upon Montana, for example, would be enormous. The computer modelling program that we have used for our projections, Occupational Employment Statistics Matrix, considers only the expected factors between now and the year 2000.

We can gain some perspective on our projections about new jobs for Montana, however, by looking at the projections of others about new jobs in our state to the year 2000. The U.S. Bureau of Economic Analysis (BEA) of the Department of Commerce provides substantially higher projections of Montana's workforce numbers for the year 2000. The BEA suggests a total civilian workforce of 462,700 for Montana in 2000. Rather than the total new jobs of 49,900 portrayed in the analysis in this chapter, the BEA instead concludes that between 1986 and 2000 almost 60,000 new jobs will be created in Montana, or about ten thousand more than our OES Matrix projections. As another comparison, Woods and Poole Economics projects Montana's total civilian labor force to be at 455,400 in 2000. Woods and Poole Economics' projection for 2000 is therefore about twenty-five hundred new jobs more than our OES Matrix projections.

These several comparisons indicate that our projections for new jobs in Montana are reasonable, even conservative expectations, but only time will tell.

PROJECTION SOURCE	PROJECTED MONTANA CIVILIAN WORKFORCE IN 2000	PROJECTED NEW JOB GROWTH BY 2000
U.S. Bureau of Economic Analysis	462,700	59,700
Woods and Poole Economics	455,400	52,400
Montana Department of Labor OES Matrix	452,900	49,900

CHAPTER FOUR

THE ROLE OF GOVERNMENT IN WORKFORCE CHANGES

Government has played an important role in maintaining and affecting the workforce for well over 2000 years. There is still discussion among historians, for example, over whether the sole motivation of the Egyptian pharoahs in building the pyramids was just religious, or if the construction of the pyramids was also intended to provide ongoing activity for farmers in the non-agricultural season.

This chapter looks at existing government programs in Montana that provide assistance to potential workers in finding or becoming able to obtain jobs, or that assist unemployed workers during their time of unemployment. Montana government has accepted the challenge of bringing people and jobs together, and we need to provide an ongoing analysis of the best ways to help make a potential worker an employed worker.

SECTION ONE: PROACTIVE APPROACHES FOR GOVERNMENT

How extensively government should be involved in assisting potential workers find jobs is a policy issue to which decision-makers on federal, state, and local levels have made a series of significant commitments. On all three levels worker-assistance programs have been established. Because of the active, interceding nature of some of these programs---through the setting of new skill goals, for example, for those participating---one could say that these programs reflect an active approach by

government to assist and encourage workers either new to the workforce or those seeking re-employment. By anticipating changing workforce needs these programs represent a proactive approach, an attempt to provide opportunities for potential workers to shape themselves into actual workers

THE JOB TRAINING PARTNERSHIP ACT (JTPA)

The Job Training Partnership Act (JTPA), initiated in Montana in 1984, is the current flagship of federally funded efforts to assist in the lives of those seeking work. JTPA replaced the federal CETA (Comprehensive Employment and Training Act) program; in this change JPTA focuses on job training and placement in unsubsidized employment, while

JTPA Training Activities

- **Job Search Assistance**
- **Outreach**
- **Remedial Education**
- **Job Counseling**
- **Industry-specific Skill Training**
- **Programs to Develop Work Habits**
- **Employment Generating Activities**
- **Vocational Exploration**
- **Basic Education**
- **Relocation Assistance**
- **Job Development**

SERVICE DELIVERY AREAS

Footnotes:
(1) Concentrated Employment Program Service Delivery Area
(2) Balance-of-State Service Delivery Area

Figure 4.1

CETA's focus included job training, income transfer, and subsidized employment. Private Industry Councils (PICs), in partnership with local elected officials, allocate funds to ensure that JPTA programs meet participants' immediate needs for employment while improving their employment future.

In Montana the JTPA program is managed locally while the state provides oversight, technical assistance, and policy guidance. Local training programs are provided by such organizations as local Job Service offices, displaced homemaker centers, Human Resource Development Councils, the Department of Social and Rehabilitation Services, the AFL-CIO and others.

JTPA provides on-the-job training, classroom training, work experience, world-of-work orientation, and supportive services components to program participants. While in the JTPA program participants can learn a variety of skills in the areas described in Figure 4.1.

JTPA was designed by Congress to be performance driven, a phrase meaning that strict performance standards have been established to assure programs are a productive investment in human capital improvement, specifically the creation of better prospective workers. As the various figures below indicate, Montana's JTPA programs have more than met national standards in both its Service Delivery Areas--the Concentrated Employment Program and Balance of State areas.

JTPA IIA ADULT PROGRAM

Figure 4.2 demonstrates the substantial success of the overall Montana JTPA IIA Adult

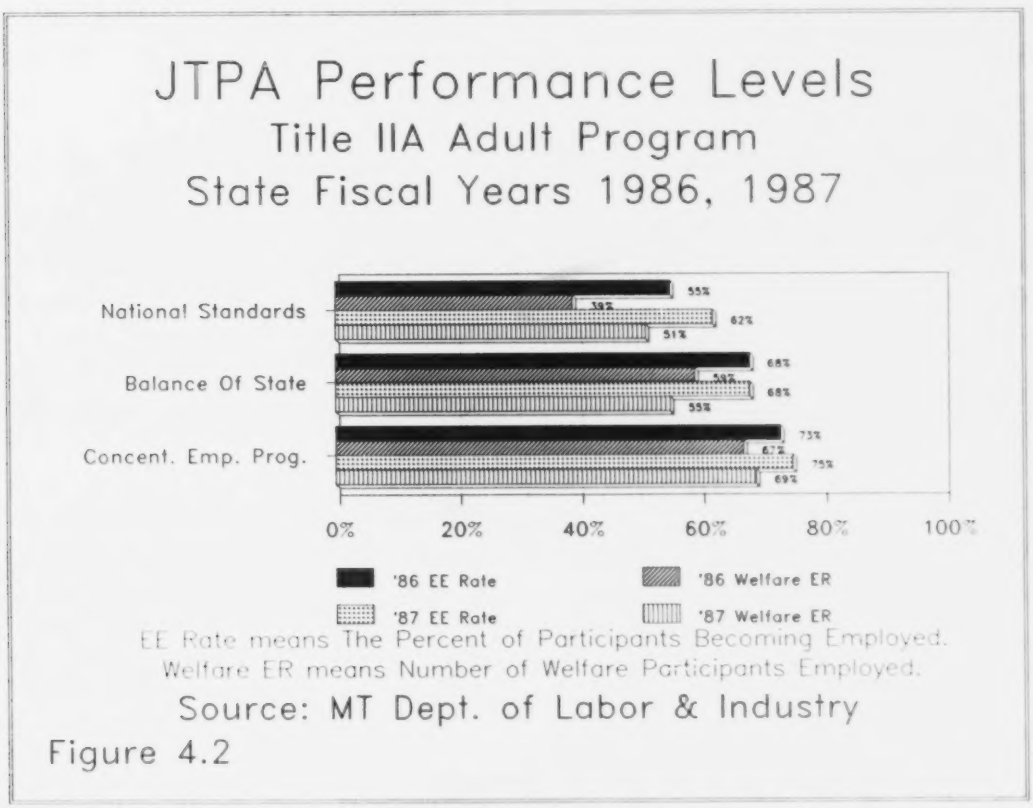


Figure 4.2

program in recent years. The EER, or Entered Employment Rate, for Montana's program represents the percentage of all those individuals who leave the program and become employed. The Welfare EER represents the percentage of those individuals receiving welfare benefits at enrollment in JTPA who are placed in jobs at the completion of their JTPA program. Over the period of 1986-1987 almost 6,000 people were served by Montana's overall JTPA IIA Adult program.

Figure 4.3 presents the same information about Montana's JTPA programs, but relates specifically the Job Service component accomplishments that are a part of Montana's overall JTPA IIA Adult program. The Job Service is often the first stop for unemployed individuals. Local Job Service offices coordinate JTPA with other services such as unemployment insurance (UI), job placement, Targeted Job Tax Credits (TJTC), veterans services, and the Work Incentive Program (WIN). Almost 4,000 people were served by the Job Service portion of the JTPA IIA Adult program in 1986-1987.Job Service works with over 8,000 Montana employers looking for qualified new employees. Last year Job Service placed 28,000 people in new jobs in Montana.

JTPA IIA HANDICAPPED INDIVIDUALS PROGRAM

Figure 4.3 also presents EER and Welfare EER rates for Montana's JTPA IIA Adult Services to Handicapped Individuals. This portion of the JTPA program is operated by the Montana Department of Social and Rehabilitation Services. As a demonstration of the state's special commitment to meet the needs of this potential worker category, the governor---at the request of the Private Industry Council---established a waiver enabling the handicapped served by this program to be covered for higher than normal costs associated with special services. Almost 700 handicapped individuals were served by this program in 1986 and 1987.

JTPA IIA DISPLACED HOMEMAKERS PROGRAM

Figure 4.3 includes information about the Displaced Homemaker portion of Montana's Title IIA Adult program. Displaced Homemakers are generally those who have not worked in the labor force for at least three years and who have lost income support after being financially dependent on another family member. Montana coordinates the federal funding of this program with state level funding from House Bill 400, the Montana State Displaced Homemaker program. These federal and state dollars are combined to enable displaced homemakers to enter the labor force and thereby achieve independence and economic security. Over the period of state fiscal year 1986-1987 more than 1,300 people have been served through this program.

JTPA IIA AND IIB YOUTH PROGRAMS

In addition to the JTPA IIA Adult programs, there are a series of youth training and employment programs. First among these is the JTPA IIA Youth program, a program that operates all year long providing youth services through Job Service offices and Human Resource Development Councils. The intent of the program is to keep youth in school by demonstrating to them the value of school in gaining skills for job advancement so that early school dropout and subsequent unemployability are reduced. As portrayed in

MONTANA JTPA PROGRAM PERFORMANCE STANDARDS

PROGRAM NAME	PROGRAM COMPONENT	NATIONAL STANDARDS	SERVICE DELIVERY AREAS: BALANCE OF STATE	SERVICE DELIVERY AREAS: CONCENTRATED EMPLOYMENT PROGRAM	
1. Title IIA Adult---all programs total					
	State Fiscal Year 1986				
	A. Entered Employment Rate (EER)	55%	68%	73%	
	B. Welfare Entered Employment Rate (WEER)	39%	59%	67%	
	State Fiscal Year 1987				
	A. EER	62%	68%	75%	
	B. WEER	51%	55%	69%	
2. Title IIA Adult---Job Service					
FY86	A. EER	55%	70%	73%	
	B. WEER	39%	62%	67%	
FY87	A. EER	62%	69%	73%	
	B. WEER	51%	58%	67%	
3. Title IIA Handicapped Individuals Program					
FY86	A. EER	55%	64%		
	B. WEER	39%	50%		
FY87	A. EER	62%	59%		
	B. WEER	51%	27%		
4. Title IIA Displaced Homemaker Program					State Displaced Homemaker Prog.
FY86	A. EER	55%	63%	77%	76%
	B. WEER	39%	not available		
FY87	A. EER	62%	67%	80%	75%
	B. WEER	51%	53%	73%	66%
5. Title IIA Youth Program					
FY86	A. EER	41%	63%	71%	
	B. WEER	43%	66%	69%	
FY87	A. EER	43%	66%	69%	
	B.WEER	75%	90%	88%	
6. Title IIB Youth Program (Summer)					
1985	A. EER	82%	94%	92%	
1986	A. EER	75%	92%	95%	
7.Title IIA Older Workers Program					
FY86	A. EER	55%	57%		
FY87	A. EER	62%	72%		
8. Title III Dislocated Workers Program					
FY86	A. EER	55%	73%		
FY87	A. EER	62%	76%		

Figure 4.3

Figure 4.3, positive termination from the program is measured by either completion of a youth's high school degree, or achievement of sufficient skills to obtain employment. During the state fiscal periods of 1986 and 1987, over 3,500 Montana youth were assisted through this program.

There is also a JTPA IIB Summer Youth Employment program provided through Montana's state Human Resource Development Councils network. Figure 4.3 indicates the high efficiency of Montana's programs compared to national standards in providing subsidized employment to disadvantaged youth. The goal of the Summer Youth Employment program is to keep youth in school, or encourage them to return to school, while providing income and work experience. The 1987 Congress mandated a literacy component for all IIB programs, a component that includes a reading and mathematics assessment for all program participants. Through its emphasis on basic educational skills, Congress hopes to further strengthen JTPA IIB Summer Youth programs, and these new program standards are being built into Montana's IIB program.

SPECIAL PROGRAMS

In addition to these well-known programs Montana also administers such JTPA Title IIA programs as the Performance-based Contracts program. In the Concentrated Employment Program area of the state the Adult Learning Center of Helena developed an achievements- or performance-based instructional program on computers, clerical, and basic business skills. In the Balance of State area another performance-based contract was established through the Northwest Human Resource Development Council in Kalispell. In this last program AFDC (Aid to Families with Dependent Children) recipients were given training as community cable TV line technicians and cable installers.

There have also been special JTPA program coordination efforts in Montana, for example with the Anaconda Local Development Corporation (ALDC). In Anaconda JTPA eligible individuals were hired by businesses, with ALDC technical assistance, as a way of addressing significant ongoing economic changes in their community, resulting in the creation of 66 new jobs.

JTPA IIA OLDER WORKERS PROGRAM

Montana's governor is mandated an additional portion of funds earmarked for program coordination, incentives grants, and direct training. One example of these programs is Montana's Title IIA Older Workers program, designed to provide special training for those unemployed people over the age of 55. Most of the training in this program is oriented toward updated skill training and retraining, in order to create pathways toward unsubsidized employment. Over two hundred persons were served by the Older Workers program in 1985-1986, primarily by the Montana Human Resource Development Councils network.

JTPA TITLE III DISLOCATED WORKERS PROGRAM

Title III is a separate state-administered employment and training program for dislocated workers, and as Figure 4.3 indicates, Montana has again done well in comparison with national standards. Title III is the most versatile program in JTPA because it mandates no income requirements and any dislocated worker can become a program participant. Dislocated workers---those unemployed through technological change, reduction in force, plant closure, or changing

labor demands---have no expectations of being recalled to the same occupation in the same area, and face an extended period of unemployment. Montana's Title III program focuses on intensive service and training to facilitate quick re-entry of dislocated workers into the labor force. Almost 1,300 dislocated workers were given skills evaluation and retraining through Montana's Title III program in the period 1985-1986. Once again, much of this training was conducted as a cooperative venture, in this instance with such organizations as the Montana AFL-CIO's Project Challenge, and the Montana Operating Engineers' and the Associated General Contractors' Joint Apprenticeship programs.

MONTANA'S APPRENTICESHIP PROGRAM

Functioning as a part of JTPA programs as well as independent of JTPA is the Montana Apprenticeship program. Through this program individuals are assigned a master trainer or trainers, and provided with other skills development training, and brought to a level of expertise to enable them to become skilled craftsmen. Examples of some apprenticeship jobs are boiler operators, construction plumbers, and meat cutters. Almost 200 workers are trained in this fashion each year in Montana.

MONTANA'S PROJECT WORK PROGRAM

The Montana State Legislature established Project Work in March, 1986, as a mandatory job training and work program. Project Work serves able-bodied General Assistance recipients in the state's twelve state-administered welfare programs. Modelled after "workfare" programs in other states, Project Work is an experiment intended to provide assessment, job readiness training, workfare, and a six month extended job search program to persons who would otherwise be served by a welfare program.

MONTANA'S NEW HORIZONS ACT

The 1987 Montana State Legislature also established the New Horizons Act, which created two new proactive employment assistance programs. The Child Care Assistance Program is a day care program that pays allowable child care costs for former AFDC program recipients during their first six months of employment. By providing these costs the program is intended to provide a bridge of support for former AFDC recipients as they return to the workplace. The second new employment assistance program is entitled the Pilot Incentive Program (PIP). PIP provides cash bonuses to displaced homemaker service providers who have trained JTPA eligible, former AFDC recipients who in turn are placed in permanent jobs. Service providers receive their bonuses for each successfully placed past client as each client completes six and then 12 consecutive months of employment.

PROSPECTIVE NEW PROGRAMS

In addition to these federal and state programs that are already in place and functioning, there are prospective new programs that may be created over the next several years. On the federal level Congress

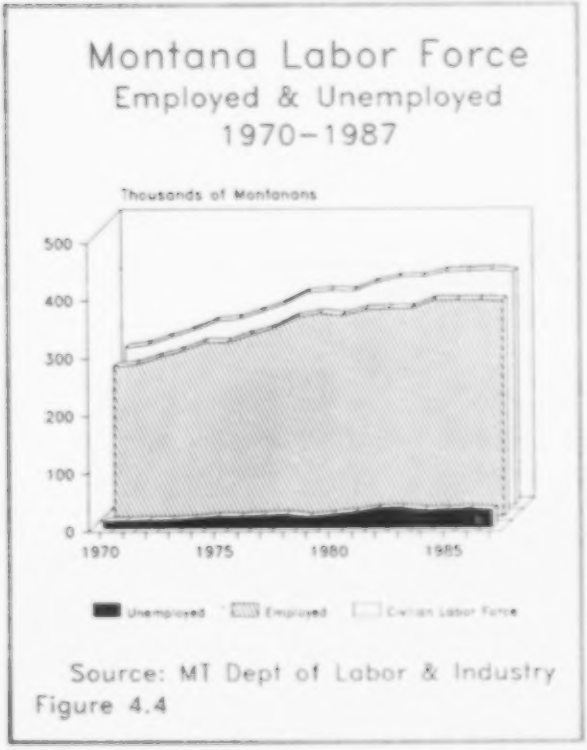
has been working on a national Family Security Act aimed at using education, jobs and training to help people break out of poverty and become more self-sufficient. In essence the Family Security Act would attempt to convert existing reactive welfare programs to more proactive workfare and job skills training programs, thereby broadening the national workforce and reducing the number of welfare recipients.

On the state level Montana's Joint Interim Subcommittee on Welfare has been exploring options to our current welfare system. One possible option the subcommittee has recommended is the expansion of the state-administered welfare system from the current number of 12 counties to include all 56 counties. By this expansion the subcommittee would standardize the current state welfare system, and achieve greater equity among the counties in terms of county-level funding support for welfare.

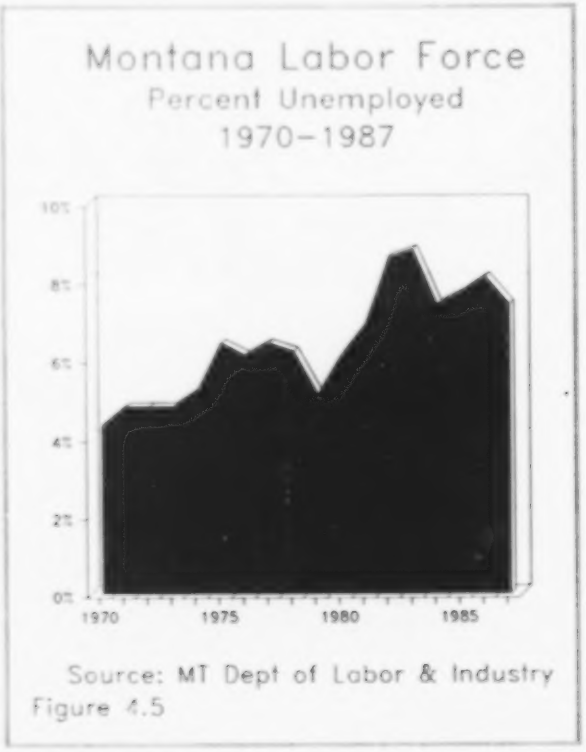
In addition to these two examples of prospective new changes, there are many other ideas about how to make our current programs more efficient, or how to improve those programs.

SECTION TWO: REACTIVE APPROACHES FOR GOVERNMENT

As helpful as a proactive approach can sometimes be, reactive programs---those providing for transition support for workers separated from the workforce---are essential to maintain the lives and families of unemployed workers during their period of unemployment. As Figures 4.4 and 4.5 indicate, while most Montanans in the civilian labor force are productively employed, there is still a small but significant portion of our population that historically requires reactive services.



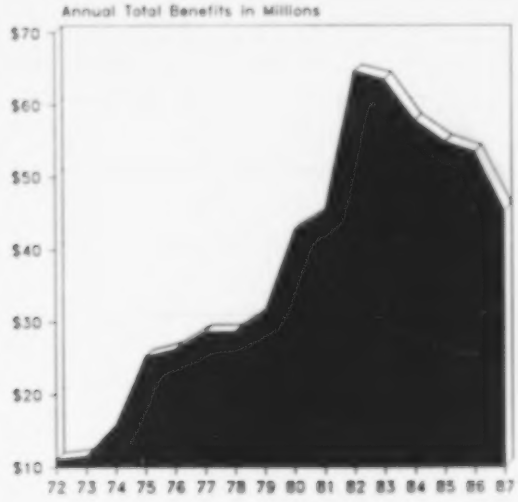
Source: MT Dept of Labor & Industry
Figure 4.4



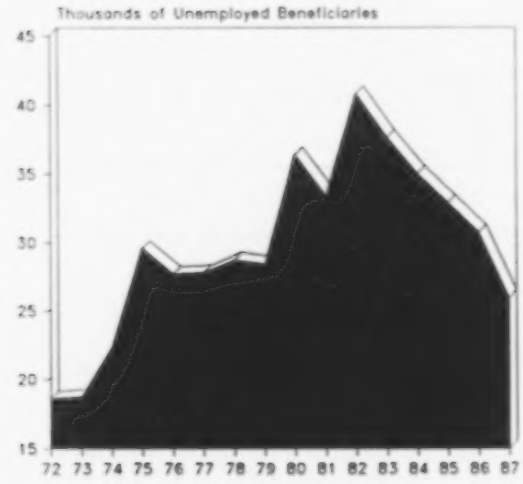
Source: MT Dept of Labor & Industry
Figure 4.5

Montana Unemployment Insurance Average Weekly Benefit Payments, 1972–198

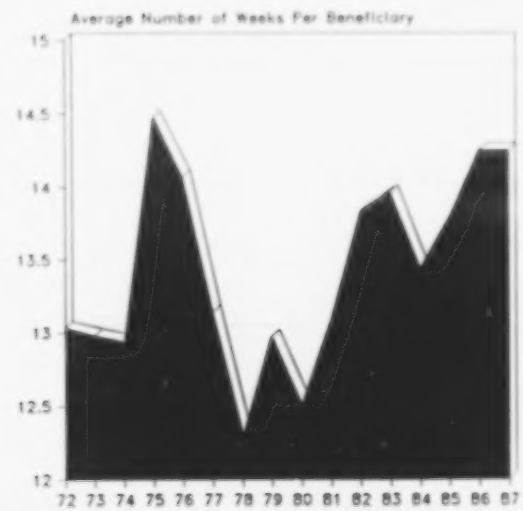
Montana Unemployment Insurance Total Benefits Payments, 1972–1987



Montana Unemployment Insurance Beneficiaries 1972–1987



Montana Unemployment Insurance Average Duration of Benefits, 1972–1987



Source: MT Dept of Labor & Industry

Figure 4.6

The Montana Unemployment Insurance program is Montana's primary reactive service program. Unemployed workers in Montana can come to their local Job Service offices and apply for unemployment insurance at the same time that they register for job placement information. As Figure 4.6 indicates, historically as many as 40,000 Montanans have relied temporarily on unemployment insurance payments while looking for new jobs. While economic conditions have recently reduced the overall need for benefit payments, the Montana Unemployment Insurance program stands as a tool to meet job market fluctuations in the future.

APPENDIX

SKILL LEVELS INFORMATION

(SEE CHAPTER THREE SECTION FIVE "EDUCATION AS COMPARED TO JOB SKILLS,"FIGURE 3.40)

Mathematical Development and Language Development (Training Time)

Commonly referred to as "tool knowledges," these embrace those aspects of education (formal and informal) of a general nature that contribute to the acquisition of such skills but do not have a recognized, fairly specific, occupational objective, ordinarily obtained in elementary, high school, or college environs and augmented by past experiences and self-study. They provide linkage between norms used for interpretation of the Basic Occupational Literacy Test (BOLT) scores and level requisites for DOT occupations. Following are the definitions and scale levels applicable to each:

a. Mathematical Developmental or Arithmetic Computation: The acquisition of basic mathematical skills, not specifically vocationally oriented, such as the ability to solve arithmetic, algebraic, and geometric problems ranging from fairly elemental to dealing with abstractions.

b. Language Development or Literacy Training: The acquisition of language skills, not specifically vocationally oriented, such as mastery of an extensive vocabulary; use of correct sentence structure, punctuation, and spelling; and an appreciation of literature.

Level	Mathmatical Development	Language Development
6	Advanced calculus: Work with limits, continuity, real number systems, mean value theorems, and implicit function theorems. Modern Agebra: Apply fundamental concepts of theories of groups, rings, and fields. Work with differential equations, linear algebra, infinite series, advanced operations methods and functions of real and complex variables.	Reading: Read literature, scientific and technical journals, abstracts, book and play reviews, financial reports, and legal documents. Writing: Write novels, plays, journals, speeches, critiques, poetry, editorials, manuals, and songs.

Level	Mathmatical Development	Language Development
6 (continued)	Statistics: Work with mathematical statistics, mathematical probability, and applications, experimental design, statistical inference, and econometrics.	Speaking: Conversant in the theory, principles, and methods of effective and persuasive speaking, voice and diction, phonetics, and discussion and debate.
5	Algebra: Work with exponents and logarithms, linear equations, quadratic equations, mathematical induction and binomial theorems, and permutations. Calculus: Apply concepts of analytical geometry, differentiations and integration of algebraic functions with applications. Statistics: Apply mathematical operations to frequency distributions, reliability, and validity of tests, normal curve, analysis of variance, correlation techniques, chi-square application and sampling theory, and factor analysis.	Same as level 6 above.
4	Algebra: Deal with system of real numbers; linear, quadratic, rational, exponential; logarithmic, angle, and circular functions, and inverse functions; related algebraic solution of equations and inequalities; limits and continuity, and probability and statistical inference. Geometry: Deductive axiomatic geometry, plane and solid; and rectangular coordinates.	Reading: Read novels, poems, newspapers, periodicals, journals, manuals, dictionaries, thesauruses, and encyclopedias. Writing: Prepare business letters, expositions, summaries, and reports, using prescribed format, and conforming to all rules of

Level	Mathematical Development	Language Development
4 (continued)		
	Shop Math: Practical application of fractions, percentages, ratio and proportion, mensuration, logarithms, slide rule, practical algebra, geometric construction, and essentials of trigonometry.	punctuation, grammar, diction, and style. Speaking: Participate in panel discussions, dramatizations, and debates. Speak extemporarily on a variety of subjects.
3	Compute discount, interest, profit, and loss: commission, markups, and selling price; ratio and proportion, and percentages. Calculate surfaces, volumes, weights, and radicals. Algebra: Calculate variables and formulas, monomials and polynomials; ratio and proportion variables; and square roots and radicals. Geometry: Calculate plane and solid figures, circumference, area, and volume. Understand kinds of angles, and properties of pairs and angles.	Reading: Read a variety of novels, magazines, atlases, and encyclopedias. Read safety rules, instructions in the use and maintenance of shop tools and equipment, and methods and procedures in mechanical drawing and layout work. Writing: Write reports and essays with proper format, punctuation, spelling and grammar, using all parts of speech. Speaking: Speak before an audience with poise, voice control, and confidence, using correct English and well-modulated voice.
2	Add, subtract, multiply, and divide all units of measure. Perform the four operations with like common and decimal fractions. Compute ratio, rate, and percent. Draw and interpret bar graphs. Perform arithmetic operations involving all American monetary units.	Reading: Passive vocabulary of 5,000-6,000 words. Read at rate 190-215 words per minute. Read adventure stories and comic books, looking up unfamiliar words in dictionary for meaning, spelling, and pronounciation. Read instructions for assembling model airplanes. Writing: Write compound and complex sentences, using cursive style, proper end punctuation, and employing adjectives and adverbs.

Level	Mathematical Development	Language Development
2 (continued)		Speaking: Speak clearly and distinctly with appropriate pauses and emphasis, correct pronunciation, variations in word order, using present, perfect, and future tenses.
1	Add and subtract two digit numbers. Multiply and divide 10's and 100's by 2,3,4,5. Perform the four basic arithmetic operations with coins as part of a dollar. Perform operations with units such as cup, pint, and quart; inch, foot, and yard; and ounce and pound.	Reading: Recognize meaning of 2,500 (two- or three- syllable) words. Read at a rate of 95-120 words per minute. Compare similarities and differences between words and between series of numbers. Writing: Print simple sentences containing subject, verb, and object, and series of numbers, names, and addresses. Speaking: Speak simple sentences, using normal word order, and present and past tenses.

This information was taken from the Selected Characteristics of the Dictionary of Occupational Titles, Appendix C.

Specific Vocational Preparation

(Training Time)

This represents the amount of time required to learn the techniques, acquire information, and develop the facility needed for average performance in a specific job-worker situation. the training may be acquired in a school, work, military, institutional, or a vocational environment. It does not include orientation training required of even every fully qualified worker to become accustomed to the special conditions of any new job. Specific vocational training includes training given in any of the following circumstances:

a.**Vocational education** (such as high school commercial or shop training, technical school, art school, and that part of college training which is organized around a specific vocational objective)

b.**Apprentice training** (for apprenticeable jobs only)

c.**In-plant training** (given by an employer in the form of organized classroom study)

d.**On-the-job training** (serving as learner or trainee on the job under the instruction of a qualified worker)

e.**Essential experience in other jobs** (serving in less responsible jobs which lead to the higher grade job or serving in other jobs that qualify)

The following is an explanation of the various levels of specific vocational preparation.

Level	Time
1	Short demonstration
2	Anything beyond short demonstration up to and including 30 days.
3	Over 30 days up to and including 3 months.
4	Over 3 months up to and including 6 months.
5	Over 6 months up to and including 1 year.
6	Over 1 year up to and including 2 years.
7	Over 2 years up to and including 4 years.
8	Over 4 years up to and including 10 years.
9	Over 10 years.

This information was taken from the Selected Characteristics of the Dictionary of Occupational Titles, Appendix D.

REFERENCES

You may wish to learn more about the topics discussed in this document. Listed below are reference materials that can help you understand more about Montana and its workforce.

GENERAL REFERENCE SOURCES

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